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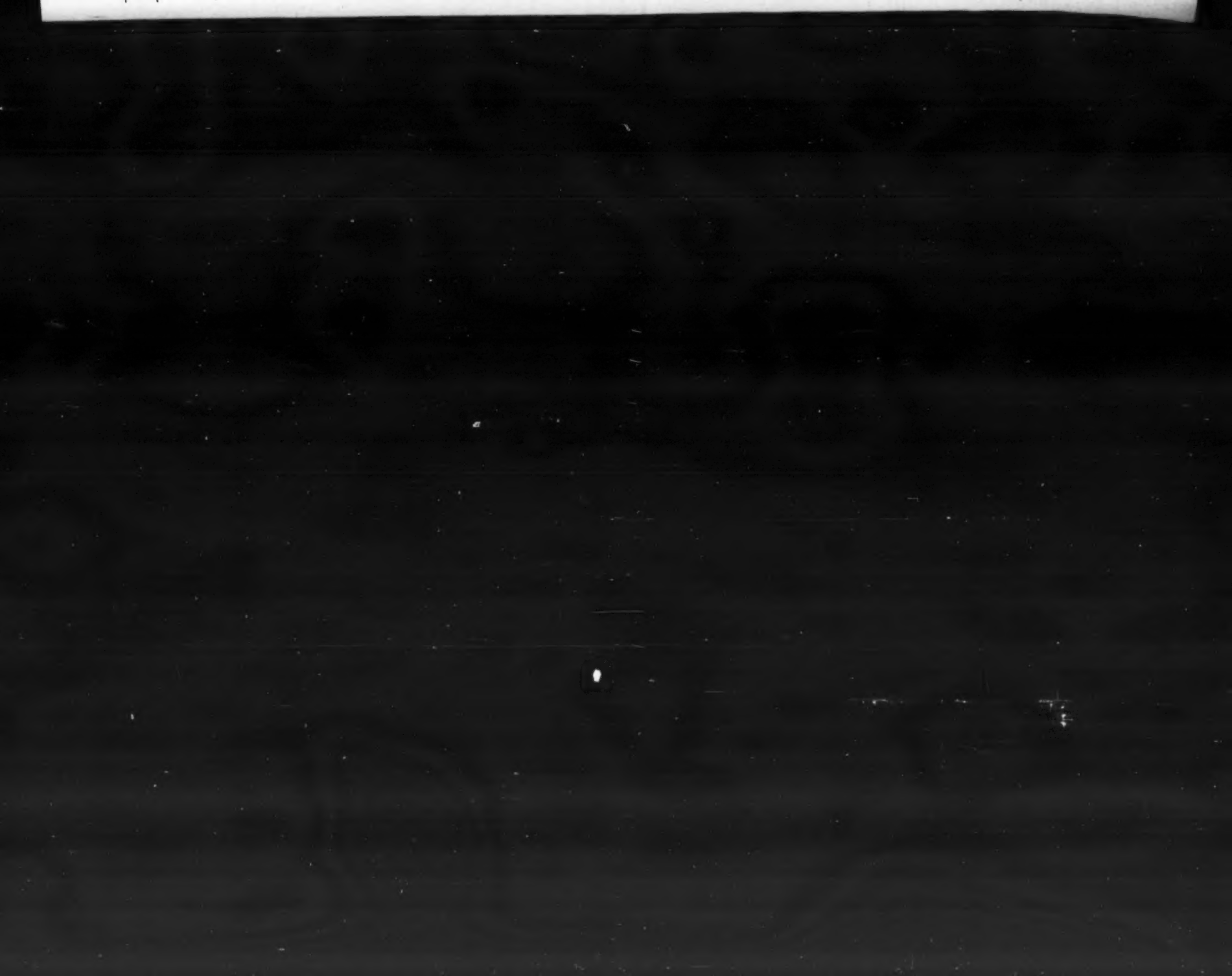

BRITISH MEDICAL JOURNAL

LONDON SATURDAY MARCH 2 1957

MULTIPLE SCLEROSIS

A PLEA FOR A FRESH OUTLOOK*

BY

DOUGLAS McALPINE, M.D., F.R.C.P.

From the Institute of Clinical Research, Middlesex Hospital

Despite its importance the subject of multiple sclerosis tends to be obscured by an aura of defeatism and even apathy for which there appear to be four main causes: (1) the apparent lack of progress in discovering the cause; (2) the generally accepted view that diagnosis is seldom possible in the early stages and cannot be made unless certain signs are present; (3) the belief that, variable though the course may be, sooner or later increasing disability is inevitable, leading to premature death; and (4) the lack of any therapeutic measure which can be relied upon to influence the disease.

I propose to deal with these points in some detail.

Aetiology—The Allergic Theory

Until quite recently the belief that multiple sclerosis was due to a single cause has dominated thought on this problem. This is well exemplified by the infective theory, which postulates that multiple sclerosis may be caused by a particular form of bacterium or virus. The negative results of earlier experimental work, particularly on the virus theory, are not entirely trustworthy because of limitations in technique. However, Lumsden (1955) has described a tissue-culture method for the detection of virus in plaques. His failure to confirm the presence of virus in a small series of plaques should not discourage others from repeating his experiments. It should be recalled that Dawson (1916), as a result of intensive histological study, concluded that multiple sclerosis might be caused by a soluble toxin conveyed to the nervous tissues, probably by the blood stream. It may well be that this concept, if viewed broadly and translated into terms of immuno-chemistry, may yet prove to be near the truth.

The so-called allergic theory, to which increasing attention has been paid in recent years, carries with it the implication of a multifactorial causation. The idea that a hypersensitivity reaction to an infection might cause disease of the nervous system was probably first put forward by Glanzmann (1927) in connexion with the neurological complications of chicken-pox, smallpox, and vaccination. In 1932 van Bogaert postulated that a similar mechanism might be at work in multiple sclerosis. In 1942 Pette further developed the theory of neuro-allergy when considering the acute forms of demyelinating disease. Ferraro (1944), on the basis of histological studies, suggested neuro-allergy as a common basis in all the demyelinating diseases, including multiple sclerosis. Clinical support for this viewpoint came from studies of the natural history of the disease (McAlpine, 1946; McAlpine and Compston, 1952). The possibility that multiple sclerosis may be due to an antigen–antibody reaction within the nervous system is at present based on deduction from a number of widely different observations.

*Based on the Annual Address given to the Newcastle upon Tyne and Northern Counties Medical Society on December 6, 1956.

Familial Tendency

In England (Pratt, Compston, and McAlpine, 1951) and Northern Ireland (Millar and Allison, 1954) the familial incidence lies between 6 and 7%. In Northern Scotland, Sutherland (1956) obtained the high figure of 11%. Siblings are more frequently attacked than other relatives. Examples of the disease in three generations are exceedingly rare. Studies by Thums (1951) in twins has shown that the disease does not necessarily occur in identical twins. These facts suggest that, when present, the genetic influence is usually weak and must be reinforced by constitutional and environmental factors before the nervous system is attacked, and, furthermore, that the disease may develop in the absence of any obvious genetic influence.

Occurrence of Allergy in Multiple-sclerosis Subjects

In a study of 250 cases of multiple sclerosis and of 250 controls from a hospital population we did not find any difference in the incidence of allergy in the two groups, but just before and after the onset of symptoms of multiple sclerosis a history of some form of allergy was obtained in 9% of this series as compared with 2.5% of the control series (McAlpine and Compston, 1952). In multiple-sclerosis patients the occasional reaction in the nervous system to organic arsenical preparations and to vaccines suggests a similar mechanism.

Precipitating Factors

Although the first symptom of the disease may appear in an apparently healthy individual without any recent incidents in the general health that can be related to the onset, more usually one of the following closely precedes it:

Fatigue.—Long recognized as a factor which may precipitate or aggravate the disease, excessive tiredness, with or without physical or mental cause, is not unusual in the history of these patients. Just as signs of paralysis may be hastened in the laboratory animal, previously injected with brain emulsion, by causing it to run about the cage, so in multiple sclerosis physical exertion may bring the disease to light or cause a relapse.

Infection.—Roughly 10% of patients give a history of an infection, usually in the form of a "cold" or "sore throat" or an attack of influenza preceding the onset. The Table illustrates this point. "Whenever I get a cold, it goes to my legs" is an expression sometimes used by these patients; it illustrates the part which an intercurrent infection may play in causing either a temporary exacerbation of symptoms or a true relapse.

Infection Preceding Onset (From McAlpine, Compston, and Lumsden, 1955)

Author	%	No. of Cases
Bramwell (1917)	14·0	200
Hoesslin (1934)	10·5	109*
Kolb *et al.* (1942)	2·0	199
McAlpine (1946)	5·0	142
Adams *et al.* (1950)	14·0	389†
McAlpine and Compston (1952)	10·0	250

* Acute. † Within six months of onset.

Trauma.—Since the end of the last century references may be found in medical literature, especially German, to the relation between trauma and multiple sclerosis. In Hoesslin's study of 516 cases trauma (including operation) precipitated the onset in 11.4% of cases. In our series of 250 cases we obtained a history of trauma, including dental extraction but not surgical operations, in 14% as compared with 5.2% in the control series. In a recent series Abb and Schaltenbrand (1956) estimated a figure of 10%. Hoesslin first suggested that there may be a relationship between the site of the trauma and the level of the lesion in the central nervous system, a finding which we confirmed in certain of our cases and which has a parallel in acute poliomyelitis.

Emotional Stress.—Although statistical evidence that an emotional upset can be regarded as a valid precipitating factor is lacking (Pratt, 1951), in individual cases it can be so regarded. Of its importance during the course of the disease, particularly as a cause of temporary exacerbations of symptoms, there can be no doubt.

Mode of Onset and Course of Disease

An abrupt onset and a natural tendency for symptoms to remit and later recur are features which have long been recognized as likely to provide a clue to the underlying cause of multiple sclerosis. Particularly in the middle-aged, there may be a slow progression of symptoms from the onset (the progressive spinal form of the disease). It would seem likely, as in certain other diseases, notably rheumatoid arthritis, that age may be a factor in modifying the individual's reaction to the morbid process.

Changes in Cerebrospinal Fluid

In roughly 70% of cases the C.S.F. is abnormal at some stage of the disease, as shown by a mild pleocytosis, an increase of protein, or an abnormal Lange colloidal gold curve. It is known that any one of these abnormalities may occur as an isolated finding. At the present stage of our knowledge it is impossible to estimate the significance of these changes in relation to the course of the disease. Recent electrophoretic studies have shown that the gamma-globulin fraction in the C.S.F. is usually increased, while that of the serum is not significantly raised. Furthermore, it is known that a change in the colloidal gold curve is closely linked with the gamma-globulin content of the fluid. Press (1956) has reported the presence of a protein in the C.S.F., component "S," which she isolated from the gamma-globulin fraction; this substance has the effect of inhibiting the colloidal gold reaction. In multiple sclerosis the proportion of component "S" tends to be decreased as compared with the amount in normal C.S.F.

Since antibodies migrate mostly with the gamma-globulin fraction of the serum it is reasonable to suppose that this component of the C.S.F. performs the same function. From the above findings it seems permissible to make two tentative deductions: first, that the changes in the C.S.F. are the result of an immunological reaction, and, secondly, that this reaction may be in the nervous tissues rather than due to an increased selective permeability of the blood/C.S.F. barrier.

Experimental Evidence

The experimental pathologist now has at his command an established technique by which he can produce a demyelinating disease (encephalomyelitis) in animals by injecting them with homologous or heterologous brain tissue. This injection has a greatly increased effect if it is given with an adjuvant, such as heat-killed tubercle bacilli. Neither the injection of an emulsion of other organs nor that of the adjuvant alone produces this effect. Brain antibodies have been demonstrated by complement-fixation tests, but they are not capable of passive transfer. All grades of encephalomyelitis, ranging from acute to chronic, can be produced by varying either the number of injections or the amount of brain tissue injected. When a chronic form is produced in the monkey, cerebellar and pyramidal signs are prominent, partial remissions may occur, and at post-mortem examination plaques of demyelination may be found in the optic nerve and brain stem that, superficially at least, bear a striking similarity to the plaques of multiple sclerosis. The literature on the subject, the reasons for supposing that this reaction may represent an immunological mechanism, and the light which these experiments may throw on the cause of multiple sclerosis have been discussed by Lumsden (1949, 1951, 1956) and by Wolf (1952).

Until more is known about the nature of the hypothetical antigen in brain tissue, the significance of experimental encephalomyelitis in relation to multiple sclerosis must remain *sub judice*. However, grounds for the belief that a form of allergy may be operative in both of these diseases have been strengthened by the marked similarity that exists between the type of polyneuritis which can be produced in rabbits by injecting them intradermally with rabbit sciatic nerve or spinal ganglia and the clinical picture of the Guillain–Barré syndrome or acute toxic polyneuritis (Waksman and Adams 1955).

Comment

It is clear that none of the clinical facts which I have briefly mentioned are in any way conclusive with regard to the allergic theory of multiple sclerosis. However, when viewed collectively the occasional familial incidence, the nature of the precipitating factors, the occurrence in some patients of a known form of allergy or a hypersensitivity to drugs, the abrupt onset and fluctuating course, and the change in the C.S.F. are all compatible with this theory.

Until disproved, the allergic theory of multiple sclerosis should be used as a basis for further research, particularly in the direction of determining the nature of the hypothetical antigen or antigens. By analogy with the results of experimental encephalomyelitis it would seem likely that, if an antigen–antibody reaction is concerned in the genesis of multiple sclerosis, part of the antigen is derived from a chemical component of the central nervous system; in other words, multiple sclerosis could in part be explained by autosensitization (Kabat, Wolf, and Bezer, 1947; Wolf, 1952; Lumsden, 1956). In addition to an *intrinsic* component of the antigen it is necessary to postulate an *extrinsic* one. Theoretically this could be a specific chemical agent derived from one or more sources.

The work of Colover (1956) on the chemistry of the tubercle bacillus may point the way to the type of chemical agent that might be expected to serve as the source of extrinsic antigen in multiple sclerosis; he has shown that the residue in the tubercle bacillus, which is active in producing encephalomyelitis, is largely protein in character with

glutamic acid and alanine as predominant amino-acids. From clinical observations, it would seem necessary first to consider as possible sources of allergen the breakdown products of the common pathogens. From the foregoing remarks it is obvious that for the elucidation of this fascinating problem we must rely on the immuno-chemist and experimental pathologist, but there remains a place in research not only for the epidemiologist but also for the clinician who is prepared to view the problem broadly.

Early Diagnosis

A diagnosis of multiple sclerosis is usually not made until at least the fourth or fifth year of the disease. There are two main reasons for this delay. (1) The patient fails to report to his or her general practitioner early symptoms—for example, an episode of tingling or of numbness or of tiredness in a limb. Only by making the public aware of the existence of the disease and its early manifestations could this difficulty be overcome. Until the medical profession adopts a less defeatist attention towards treatment it is doubtful whether such a step is at present justified, although as an indirect result of the activities of lay societies knowledge of the disease is slowly spreading. (2) The fallibility of us all, consultant and general practitioner alike, when confronted with a minor disturbance of function of any part of the body, more especially of the nervous system. Instead of dismissing an apparently trivial complaint regarding vision, sensation, or use of a limb, sometimes with labels as "eye-strain" or "neuritis," we must train ourselves to think of multiple sclerosis as a possible cause, even though on examination of the patient we can find little or no evidence to suggest organic disease.

There are certain features of the clinical picture which individually or collectively may lead to a correct diagnosis.

History.—This is of major importance, since it often raises suspicion of the disease, especially if after careful probing of the past one or more episodes come to light, often trivial and almost forgotten, suggesting a previous lesion in the central nervous system.

Family History.—In a suspected case of multiple sclerosis discreet inquiries should always be made for any neurological disorder in a near relative. Occasionally a positive history of multiple sclerosis in another member, or of paralysis occurring in youth or early middle age, which hospital records may confirm as due to multiple sclerosis, will heighten the suspicion of the same disease in the patient.

Prodromata.—Lassitude, easily induced fatigue, headache, irritability, difficulty in concentrating, and vague pains in the limbs are among the symptoms which may occasionally precede or accompany the onset and which may indicate a constitutional phase of the disease.

Behaviour of Early Symptoms.—Of major importance in diagnosis is the tendency for early symptoms to clear up, entirely or partially. Often, however, this important feature of multiple sclerosis, instead of arousing suspicion, has the opposite effect, and the reassurance given to the patient may seem well founded when perhaps months or even a few years pass by without any recurrence. The word "transitory" as applied to early symptoms is usually interpreted as meaning days or even weeks. However, quite commonly when taking the history one comes across episodes of disturbed vision, giddiness, or of tingling or numbness that lasted only hours or even minutes. Just because these early symptoms may be very short-lived they should not be dismissed as insignificant.

Evidence of Multiple Lesions.—It is often held that a diagnosis of multiple sclerosis cannot be entertained unless there is evidence of multiple lesions. It is quite true that such evidence—for example, the association of double or blurred vision and of paraesthesiae or weakness in a limb—is extremely helpful. However, a monosymptomatic type of onset is relatively common. In a recent analysis of 309 cases admitted to the Middlesex Hospital over a five-year period, in no less than 63% a history of a single symptom was obtained at the onset: retrobulbar neuritis (21%) headed the list, followed by paraesthesiae (17%), motor weakness (14%), double vision (7%), and vertigo or vomiting (5%) (McAlpine, 1955).

Distribution of Symptoms.—Highly characteristic of multiple sclerosis is the irregular distribution of plaques in the central nervous system; consequently symptoms tend to be asymmetrically distributed. However, it is important to realize that they may occasionally show a remarkable degree of symmetry; for example, an attack of blurred vision in both eyes or paraesthesiae appearing symmetrically in the upper or lower limbs. If this feature of the disease is not recognized, difficulties in diagnosis may arise, especially when symmetrical paraesthesiae are present, thus imitating the distribution seen in acute polyneuritis.

Tendency for Local Spread of Early Plaques.—While it is quite common for a symptom to remain localized, not uncommonly there is a tendency towards spread. For example, a patient may describe how she first noticed a blurring in the centre of the field of vision which rapidly spread to involve the whole field. Or, again, numbness may spread locally; for example, from the little and ring fingers to the remaining fingers and rest of the hand, or widely from the upper limb to the trunk and lower limb on the same side, or in the reverse direction. This type of spread does not occur haphazardly, but is determined by the anatomical arrangement of fibres in the neighbourhood of the plaque. For example, paraesthesiae such as tingling and numbness are usually caused by a plaque in the posterior column, and if they spread widely it is sometimes possible to correlate the mode of spread with the arrangement of the proprioceptive fibres. The rapid manner in which spread may occur in multiple sclerosis is of diagnostic importance.

Physical Signs.—It is still widely held that a diagnosis of multiple sclerosis cannot be made unless certain signs are present, notably nystagmus and an extensor plantar response. It is of course true that the presence of these and other signs, particularly temporal pallor of a disk, are of the utmost value; nevertheless their relative or complete absence should not allay suspicion if the history is suggestive.

Cerebrospinal Fluid Findings.—A mistaken idea that lumbar puncture may be harmful in cases of multiple sclerosis may be one reason why this important diagnostic procedure is not used more often. Replacement of the fluid by 5 ml. of sterile normal saline solution reduces the risk of headache.

Some Remarks on Early Symptoms

Retrobulbar Neuritis

The clinical picture of an acute retrobulbar neuritis and its close association with multiple sclerosis is well known. I wish to draw attention to certain atypical features of this condition, some of which, so far as I can judge, are not well recognized. The first concerns short-lived attacks of blurred vision in both eyes, a history of which may sometimes be obtained in a patient who presents with a frank retrobulbar neuritis or with other evidence of the disease. Frequently, but not invariably, these attacks are brought on by exertion, fatigue, bright light, or reading. Multiple sclerosis is, of course, not the only condition in which temporary attacks of blurred vision occur; it may, for example, be caused by cerebral anoxia, or by posterior fossa tumours (Shephard and Wadia, 1956). In multiple sclerosis this symptom has a significance, not only for early diagnosis, and as a probable explanation of temporal pallor of a disk in the absence of a positive history of a frank attack of retrobulbar neuritis, but also in relation to the physiopathology of the early plaque.

The next point concerns field defects. Although usually centrally placed, a scotoma may vary not only in density but also in its position in the visual field. Whatever the site of the original defect, there is a tendency for the scotoma to spread. Retrobulbar neuritis may be painless; on the other hand, pain in or behind the eye, especially on upward or

inward movement, is not uncommon. Of particular interest is the fact that pain in this situation may precede any subjective alteration in vision by a week or even longer. I have seen patients with retrobulbar neuritis who have had one or more attacks of pain in the eye without any visual failure. Pain preceding retrobulbar neuritis may be referred sometimes to the same frontal region or more widely over the whole of the side of the head. Where is the site of the pain in such cases? Ophthalmologists usually localize pain in and around the eye to the attachment of the superior and internal recti in the sheath of the optic nerve. This explanation does not adequately account for the occasional widespread pain met with in retrobulbar neuritis. Obviously this is a subject much in need of study, since if we knew what structures were involved we might have a valuable clue to the site of the early lesion.

Paraesthesiae

When a young or middle-aged patient presents with a disturbance of sensation as a solitary symptom the possibility of disease of the central nervous system does not readily come to mind. However, before explaining such symptoms as tingling, pins-and-needles, numbness, or deadness on the basis of a disturbance of the peripheral nervous system, the distribution, mode of onset, and duration of paraesthesiae should be carefully noted. If they are referred to the periphery of one limb confusion with a mononeuritis may readily occur; if, however, pins-and-needles or numbness is referred to the proximal half of a limb or to the trunk, then a root or cord lesion must be considered. I have already drawn attention to the symmetry sometimes shown by the paraesthesiae of multiple sclerosis and their striking resemblance to those occurring in some forms of polyneuritis (including the opening phase of subacute combined degeneration of the cord). Rapidity of onset and of spread characterize the paraesthesiae of multiple sclerosis. A spreading tingling going on to numbness and clumsiness of the affected part, with diminution or loss of two-point discrimination and vibration and postural senses, are well-recognized features of a plaque in the posterior column. A feeling of warmth or of coldness or dampness in a lower limb or inability to appreciate the warmth of a hot bath, coming on abruptly, should arouse suspicion of a plaque in the contralateral spinothalamic tract. The issue as between a peripheral and a central cause of paraesthesiae may be clarified first by the results of clinical examination and secondly by the clearing up of symptoms. Symmetrical or four-limb paraesthesiae when due to a peripheral neuritis tend to progress, while depression of the deep reflexes is followed by their disappearance.

Pain is not at all uncommon in the opening phase of multiple sclerosis. It is usually described as an ache referred to the back or the upper or lower limbs. Occasionally it may be sharp, though it is not aggravated by coughing or straining. A recent history of pain should not automatically exclude multiple sclerosis as a possible cause of an episode of paraesthesiae.

Motor Weakness

Here again it is the minor degree of disability, disguised as a "tiredness," a "heaviness," or a "stiffness" in one or both limbs, especially after walking, that is often misinterpreted. In some cases pyramidal signs are evident; in others a careful examination is required to bring out fatigability or depression of the abdominal reflexes, a slight inequality in knee- and ankle-jerks, and an equivocal plantar response. When the first plaque or plaques giving rise to symptoms are situated in the optic nerve or the dorsal half of the brain stem or posterior columns, pyramidal signs may be absent.

Sphincter Disturbance

Spincter disturbance is uncommon as an early symptom unless there is evidence of a myelitis due to the disease. Occasionally, however, frequency and urgency of micturition or, rarely, incontinence are presenting symptoms, and I have met with a few cases of this type in which pyramidal signs were indefinite or even absent. If the urologist's report is negative, then the possibility of multiple sclerosis should be considered and lumbar puncture performed.

Progressive Spinal Form of Multiple Sclerosis

In approximately 10% of all cases of multiple sclerosis the onset is insidious and the course progressive. This form is more common in the middle-aged than in the young. Differentiation from other causes of paraplegia in the middle-aged may be extremely difficult. Two conditions are apt to be confused with it: cervical spondylosis and spinal cord compression. Some progressive cases of multiple sclerosis have relapses superimposed on their progression, and this fact may be helpful in diagnosis. More important may be the detection of an extraspinal lesion, either from the history or from the clinical findings. Among the latter, nystagmus, other than purely horizontal, temporal pallor of a disk, dysarthria, or intention tremor in an upper limb should be looked for. A positive Lange colloidal gold curve in the C.S.F. may decide the issue. Lastly, radiological proof of a cervical spondylosis does not necessarily mean that associated cord signs are due to it; multiple sclerosis and cervical spondylosis may coexist. Myelography is necessary to establish this fact, as well as exclude the possibility of spinal-cord tumour.

Brain-stem Signs

An early case of multiple sclerosis may present signs which clearly indicate the presence of plaques in both brain stem and spinal cord. However, when signs are confined to the brain stem the diagnosis may not be clear. There are three ways in which multiple sclerosis of the brain stem may present.

(1) *As an Acute or Subacute Encephalitis.*—An abrupt onset of drowsiness, paresis of one or more cranial nerves, especially the third or sixth, with the appearance of motor, sensory, and cerebellar signs in the limbs, may closely simulate a virus encephalitis, particularly that due to poliomyelitis virus, and it is understandable that such cases should sometimes be admitted to infectious-fever hospitals. The absence of fever and neck stiffness, a positive Lange colloidal gold curve in the spinal fluid, a tendency for fresh symptoms to develop in the second or third week of the illness, and the persistence of sensory disturbance are some of the features which would suggest acute multiple sclerosis. Euphoria is occasionally met with in both these types of acute encephalitis, but is relatively more common in multiple sclerosis.

(2) The second group of cases are characterized by focal signs, sometimes suggesting a unilateral lesion, for example, of the pons, but more usually a paresis of a single cranial nerve. *Double vision* occurs at the onset of multiple sclerosis in roughly 15% of cases, in half this percentage as an isolated symptom. The sixth nerve is more commonly affected than the third. Multiple sclerosis is a common cause of a transitory diplopia in a young adult, and here again lumbar puncture may be of the greatest value. *Numbness in the face* may occur either as part of a unilateral pontine picture or as an isolated symptom. If, after extraction of a tooth, numbness persists for a few days it should not be attributed to the effect of a procaine injection. *Bell's palsy* may on rare occasions be the first symptom. Although an absence of pain and of loss of taste with rapid recovery may be noted as unusual features, its possible relationship to multiple sclerosis is usually not considered until later, when the patient presents with undoubted signs of the disease.

(3) *Vertigo* in varying degrees of severity is a relatively common symptom during the course of multiple sclerosis and occasionally it may be the presenting symptom. Vomiting may accompany or precede giddiness. The resemblance to Ménière's syndrome may be close, particularly when a degree of deafness is present. As a rule, however, in multiple sclerosis hearing appears to be normal though audiometry

may show some degree of nerve deafness on one or both sides. Although "epidemic vertigo" and "vestibular neuronitis" are better-recognized causes of an acute vestibular upset with normal hearing, multiple sclerosis should not be forgotten as a possible cause, more especially when nystagmus persists after vertigo has disappeared or other signs are present. *Cerebellar signs* may be prominent at the onset, as shown by dysarthria and a reeling or drunken gait without vertigo; as a rule other evidence of the disease can be found.

Course of the Disease

Most textbook descriptions of multiple sclerosis imply that, although its course is extremely variable, sooner or later a severe degree of disability is inevitable. Although this statement is unfortunately true of the majority of cases, it fails to take into account the possibility of a high resistance to the disease. For example, in the Middlesex Hospital series of 586 cases, 13% of those followed for 15 years showed no disability (McAlpine and Compston, 1952). The preliminary results of a fresh follow-up on which I am at present engaged would appear to confirm the existence of a *benign form* of the disease, characterized in the main by a good recovery from the initial attack and a tendency for relapses to be mild and infrequent or cease altogether. It has long been recognized that after an attack of retrobulbar neuritis the disease may remain quiescent for many years; for this reason such cases are often excluded from a follow-up of this type, and accordingly I have adopted this practice unless on one or more occasions there have been other signs of the disease or changes in the cerebrospinal fluid. However, the emphasis on retrobulbar neuritis in relation to long latency of the disease has tended to obscure the fact that other isolated symptoms such as diplopia or an episode of paraesthesiae may be followed by an equally long latent interval.

Earlier I mentioned certain factors that might influence not only the onset but also the course of the disease. These in order of importance are (1) intercurrent infection, (2) fatigue, (3) emotional upset, and (4) trauma. From work on the effects of pregnancy (Müller, 1949; Tillman, 1950; McAlpine and Compston, 1952) it is clear that its role has in the past been exaggerated. The risk of relapse can be further minimized by discouraging pregnancy until the disease has been stabilized for at least two years, by an extra period of rest after confinement, and by the provision of adequate help in the house so as to reduce fatigue, consequent upon the care of a young baby.

Treatment

The lack of a realistic approach to the problem of multiple sclerosis is chiefly responsible for the negative attitude towards its treatment. The knowledge that no drug is available that can be relied upon to prevent relapses and thus modify the course of the disease is not a valid reason for neglecting general principles in treatment. In a case of rheumatoid arthritis or of chronic asthma the physician is not content to focus his attention on joint or chest but realizes that success or failure may depend on the extent to which he can improve his patient's physical and mental health.

Likewise in treating an early case of multiple sclerosis our attention should be fixed on the constitutional and environmental background of the patient rather than on the nervous system. If arrest of the disease may occasionally occur spontaneously, this fact should encourage us to do our utmost for the early case. Failing an effective remedy, I suggest that the greatest contribution that we can make towards early treatment is to adopt the same attitude of mind as that taken towards the tuberculous patient. If this were done I feel convinced that, in a worth-while proportion of cases, the disastrous results which we see all too often would be avoided or at least mitigated. Therefore every effort should be made to establish the diagnosis at the earliest possible moment.

Turning to general principles, there are two that should be in the forefront of our minds when confronted by an early case. (1) To ensure the maximum degree of recovery from the initial attack and early relapses. This is best attained by an adequate period of rest in bed during the active phase of the disease, followed by prolonged convalescence, varying from two to six months. (2) To adopt all measures which may reduce the risk of relapses. In practice this means careful attention to general health and mode of life. When the diagnosis of multiple sclerosis is suspected admission to hospital should be arranged, preferably under the care of a neurologist, for a fourfold purpose: (*a*) to confirm the diagnosis from clinical and cerebrospinal fluid findings; (*b*) to ensure proper rest in bed; (*c*) to afford an opportunity of correcting any abnormalities in the general health suggested by the history—in particular, possible foci of infection (for example, sinuses, tonsils, teeth, and urinary tract), and to discuss frankly the cause of any anxiety symptoms; and (*d*) to carry out any therapeutic measure that may increase resistance.

The variety of remedies at present advocated scarcely suggests that any will eventually prove to be of value. They include isoniazid, vasodilators, a low-fat diet (Swank, 1955), Evers's uncooked food diet, and lastly vaccines and serums. Of those preparations used in Great Britain liver and vitamin B_{12} are the most popular; multiple sclerosis is not a deficiency disease, therefore their use does not extend beyond the possible effect on general health. Theoretically a claim could be made out for trace elements, in particular copper and cobalt, but in practice they have not so far proved effective. Judged by reports in the literature, the results from the use of corticotrophin and cortisone have been disappointing. If the allergic origin of the disease be used as a working hypothesis some method of stimulating the defence mechanism of the body would seem worth a further trial. In the meantime we must rely on an old-established remedy—namely, arsenic. I have used this for many years in the form of intravenous neoarsphenamine, four courses yearly, with Fowler's solution in between the courses. Although this treatment, if begun early in the disease and kept up for five years or more, does not necessarily prevent relapses, I believe that in some patients it may modify their frequency and severity and so delay or even prevent the stage of progression. In those patients whose resistance is low a downward course occurs despite this or any other form of treatment. An antihistamine drug is indicated when there is an associated allergic disorder or in those patients who can tolerate arsenic only in the form of Fowler's solution.

Many of those who advocate a particular line of treatment in multiple sclerosis are inclined to quote individual cases in which a cure seems to have been produced. They should bear in mind that in at least one patient in every ten resistance is high and there may be no disability after 15 years. In order to prove the efficacy of any method of treatment it would have to be shown that in a series of cases relapses were prevented, and that disability was negligible in more than 20% of a series of cases followed up for a similar period.

Under what circumstances should a patient with multiple sclerosis be informed of the diagnosis? Neurological opinion, in this country, would, on the whole, appear to be in favour of withholding this knowledge until the disease is well established. However, a positive attitude towards the management of the early case demands the intelligent co-operation of the patient, and therefore in responsible adults an explanation of the nature of their illness is essential. A comparison with the known allergic disorders is useful as it affords an opportunity of referring to relapses, to the circumstances which may lead up to them and which therefore must so far as is possible be avoided, and to the importance of complete rest should a relapse occur. A decision to recommend long-term treatment, for example with arsenic, is usually accepted by the patient if the advice is given with a degree of conviction. If tactfully conducted, this method of approach nearly always leads to a quick

adjustment and a readiness to co-operate to the full during the first crucial years of the disease. Above all, the impression must not be left on the patient's mind that he or she is suffering from a mysterious disease about which nothing is known and for which there is no treatment.

Summary

An air of defeatism tends to surround the subject of multiple sclerosis. The reasons for this attitude are examined in some detail.

Aetiology is discussed with especial reference to the allergic theory.

A diagnosis of multiple sclerosis is usually not made until the fourth or fifth year of the disease. The causes of this delay are discussed and early symptomatology is reviewed.

The traditional belief that multiple sclerosis inevitably leads to increasing disability and premature death requires modification in the light of recent studies. A brief reference is made to the concept of varying degrees of resistance and to a benign form of the disease.

A plea is made for a more positive attitude towards treatment. In an early case more attention should be paid to the constitutional and environmental background of the patient. Stress is laid on the importance of rest during active phases of the disease, followed by prolonged convalescence. In responsible adults an explanation of the nature of their illness is essential in order to obtain intelligent co-operation in treatment.

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A new British Standard (2805 : 1957) specifies a range of straight artery (haemostatic) forceps of the Spencer Wells pattern having a screw joint and made of stainless steel. Provision is made for the 5 in., 6 in., 7 in., 8 in., and 9 in. (12.7–22.8 cm.) sizes. The preparation of this Standard was recommended by the Ministry of Health and authorized by the Surgical Instruments and Medical Appliances Industry Standards Committee of the British Standards Institution. British Standard 2805 may be obtained through the Sales Branch of the British Standards Institution, 2, Park Street, London, W.1, price 3s. 6d.

POLYRADICULITIS (LANDRY–GUILLAIN-BARRÉ SYNDROME)

TREATMENT WITH CORTISONE AND CORTICOTROPHIN

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The clinical and pathological identity of Landry's ascending paralysis and the Guillain–Barré syndrome (polyradiculoneuritis ; acute infectious, toxic, or febrile polyneuritis ; or infectious neuronitis, polyneuritis cranialis, etc.) was fully established by the important review of Haymaker and Kernohan (1949). Since then the non-specific nature of the syndrome and its relation to other acute inflammatory diseases of the nervous system, and possibly to allergy, have been noted (Stanton *et al.*, 1953), while the results of treatment with corticotrophin and cortisone have been described by Clarke *et al.* (1954) and others.

In the past three years we have treated five deteriorating cases of this condition with corticotrophin or cortisone, and in this paper we present these cases, review the available literature on the subject, and endeavour to draw some general conclusions.

Case 1

On November 6, 1953, three weeks after a brief attack of acute febrile bronchitis, a 28-year-old docker developed an illness initially regarded as influenzal, characterized by fever, backache, and headache. Twenty-four hours later he developed tingling in the tip and dorsum of the tongue, and, after a similar interval, ascending paraesthesiae and weakness in both lower limbs. By November 9 he could progress round the room only by holding on to the furniture. Weakness of the legs increased further, and on November 13 he noticed paraesthesiae in both hands. His speech became slurred, and food stuck in his throat ; there was slight dysuria and some constipation. At this stage he came under medical observation, and over the course of the next few days all deep reflexes disappeared, asymmetrically bilateral facial weakness developed, and loss of superficial sensibility became evident over the whole of both lower limbs, the forearms, and a band round the trunk between nipples and umbilicus. The legs were much weaker than the arms, and when he was admitted to our care on November 18 he was unable to stand. Weakness and muscle tenderness were generalized, but were most marked in the proximal limb muscles. Blood examination, E.S.R., E.C.G., and *x*-ray films of the chest and spine showed nothing abnormal. The only abnormality in the spinal fluid was a protein content of 240 mg. per 100 ml., rising subsequently to 480 mg.

In view of continuing deterioration, and especially pharyngeal pooling of mucus owing to bulbar weakness, oral administration of cortisone was begun at once. He was initially given 300 mg. daily, but this was reduced gradually to 100 mg. daily by the fifth day, and the smaller amount administered daily for a further five days.

Within 18 hours of first receiving cortisone (225 mg.) the patient claimed to feel much better and that his voice was stronger, but examination failed to substantiate his claim of improvement, which was attributed to pharmacologically induced euphoria. Within 36 hours of instituting treatment, however, the facial diplegia showed unequivocal improvement and he could whistle feebly. His voice appeared to be somewhat stronger, but his own claims of improvement in swallowing and improved power in the limbs were unsupported by objective evidence, which showed no change in power, reflexes, or sensation.

Reassessment at the end of 10 days' treatment suggested that the condition had ceased to progress. Facial weakness was greatly improved, the voice stronger, and swallowing normal. Sensory loss was less extensive on limbs and trunk, while pain and muscle tenderness had disappeared. Motor weakness in upper and lower limbs, however, was as severe as on admission, while there was no return of reflex activity.

Subsequent improvement was slow but steady, and five months later his sole disability was some weakness of the left leg. By August, 1954, there was no residual disability and all deep reflexes had recovered.

Comment.—In this severe case of polyradiculitis the administration of cortisone was followed by unequivocal clinical improvement within 36 hours, and at the end of 10 days' treatment this improvement was striking. From this point onwards, however, further improvement was slow, and it was eight months before recovery was complete.

Case 2

A 33-year-old housewife was admitted to hospital under the care of Dr. H. A. Dewar on November 16, 1955, with an eight-weeks history of tingling of the fingers and hands, followed by slight loss of grip. Five weeks before admission she had developed weakness of her ankles and legs and had been put to bed for one week, following which she got up again, but was able to get about the house only with the aid of sticks. The weakness increased and two days before admission she was unable to walk. Constipation had been troublesome throughout the illness.

On examination she appeared to be in good health. The cranial nerves were normal, but there was some loss of power in the forearms and marked loss of power in both legs, with severe bilateral foot-drop. All deep reflexes were absent, and muscle pains and tenderness were conspicuous. There was loss of superficial and deep sensibility in both feet. The spinal fluid contained 800 mg. of protein per 100 ml. Other ancillary investigations were negative.

During an initial period of two days' observation there was no improvement in her condition, and after this time cortisone was administered. She was given 200 mg. daily for three days, 100 mg. daily for 18 days, the drug being then gradually withdrawn over the course of a week. Within 48 hours subjective and objective improvement was evident: her grip was improved and toe movements had returned. Within eight days she could move the legs weakly, and improvement of power in the hands permitted knitting. There was improvement in sensibility in the legs, and the deep reflexes had returned weakly in the arms.

From this time progress was slower. Within three weeks, however, she was able to walk with assistance, and was discharged from hospital on December 31—six weeks after admission.

When the case was reviewed six months later, progress had been continuous but slow, and the patient was able to walk without the use of sticks. Her only complaint was that she put her feet down rather heavily when walking. All limbs showed absence of deep reflexes, but power was good apart from slight weakness of dorsiflexion of the feet; sensation was normal.

Comment.—This patient, an example of mild polyradiculitis, showed what appeared to be a satisfactory initial response to treatment with cortisone, followed by slow improvement indistinguishable from that seen in untreated cases which recovered.

Case 3

A 40-year-old driver was well until a month before admission to hospital, when he noticed some tingling in his fingers and toes. A week later he developed stiffness and pain in the neck and shoulders, and four days after this sharp cramping pain occurred in the muscles of the left thigh. During the next two weeks muscle pains became severe and generalized; he developed a moderate fever, a right facial palsy of peripheral type, mistiness of vision, and slurred speech.

On his admission to hospital on December 30, 1955, examination revealed slurring dysarthria, neck stiffness, bilateral facial palsies more evident on the right, loss of power in the limbs which was more marked peripherally in the lower and proximally in the upper limbs, general hypotonia, and loss of reflexes with widespread muscle tenderness, especially marked in the calves. There was no sensory loss, but the soles were hyperaesthetic. The left plantar response was flexor, the right variably extensor. Ancillary investigations were normal, but spinal fluid examination yielded as the only abnormality a protein content of 290 mg. per 100 ml., a figure which was almost doubled on subsequent examination.

Clinical deterioration continued, and, as the patient developed slight difficulty in swallowing, 200 mg. of cortisone was administered at once, followed by 100 mg. thrice daily. Some improvement was evident within 18 hours of the first dose and was quite marked in 48 hours, by which time the facial palsies were much less conspicuous (the severe right-sided paralysis showing the more striking response), he was able to whistle a little, and speech was distinctly clearer. The dose of cortisone was gradually reduced to 200 mg. and then to 100 mg. daily, and its administration was stopped on the seventh day. At this time, in addition to the improvement already noted, there was increased power in the lower limbs; he was able to dorsiflex both feet, while both plantar responses had become clearly flexor.

Twenty-four hours after the last dose of cortisone the patient, a phlegmatic individual, complained of suddenly feeling very ill with intense pain in the limbs, particularly the legs. These symptoms cleared up within half an hour, but by this time a marked deterioration in physical signs was evident. His right facial weakness was again much more pronounced, vision in the left eye was blurred (without objective findings), his legs were weaker, and the plantar responses were unobtainable. By the next day this deterioration was more evident. His speech had once more become slurred, and he was having some difficulty in passing water.

In view of these developments he was given a further course of cortisone, beginning five days after the end of the previous treatment. On this occasion no dramatic response was obtained. He claimed to feel better, and there was certainly no further deterioration, but on re-examination after 10 days on cortisone his objective improvement was negligible.

From this time the slow but progressive improvement in function which occurred was similar to that with which we are familiar in a severe case of the untreated disease. It was four months before he was able to stand, and even in September, 1956, walking was still much impaired, while the deep reflexes had not yet reappeared.

Comment.—This patient showed unequivocal improvement within 24 hours of the administration of cortisone, but a relapse which occurred when the drug was withdrawn showed little response to a further course of treatment given within four days of the onset of deterioration. On this second occasion the drug relieved pain but produced no improvement in physical signs.

Case 4

A 5-year-old girl was admitted to the Sunderland Children's Hospital under the care of Dr. J. B. Heycock on February 7, 1956. Six weeks before admission she developed tonsillitis, and after this had subsided she remained unwell in herself for a week, during which time she was kept in bed. At the end of this period she developed spontaneous pains and painful cramps in the legs and was observed to limp. These symptoms became more pronounced during the fortnight preceding admission, and she was noticed to lie down a good deal with knees flexed in order to obtain relief.

On admission she was unwell and miserable, with flaccid weakness of all limbs, especially in the legs, and with total disappearance of deep reflexes. The muscles were tender, but no loss of sensation was demonstrable. The spinal fluid protein was 100 mg. per 100 ml., and all other ancillary investigations were negative.

Over a period of 48 hours' observation there was unequivocal deterioration with increasing weakness and at the end of this period (February 17) cortisone was started by mouth, 100 mg. daily being given in four doses for five days, and then 200 mg. daily for seven days, after which time the drug was gradually withdrawn over the course of four days.

The response was not dramatic. What had previously been a steadily deteriorating course ceased to progress, and pain disappeared within 24 hours and the child's general condition also appeared to be improved. There was, however, no convincing change in the neurological findings, except for the disappearance of the muscle tenderness, until seven days after the end of treatment, when the condition began to show unequivocal improvement with increase in power in the legs which was rapidly progressive. Within a month there was a marked degree of improvement in the power of all limb groups, though the deep reflexes remained absent.

She was discharged from hospital on April 4, and continued with exercises and physiotherapy for a further month, when she was again reviewed. Re-examination showed steady but slow improvement; there still being some weakness of the arms and legs, most pronounced in the quadriceps. The deep reflexes were still absent.

Comment.—Except for disappearance of pain and muscle tenderness, this child showed no evident improvement on cortisone, the administration of which coincided, however, with the arrest of progressive deterioration in her condition. Objective improvement in physical signs was not evident until after treatment was withdrawn, following which the course of the illness was characteristic.

Case 5

A 40-year-old stone-mason presented on August 24, 1956, with a story of four days' numbness and weakness spreading up the arms and legs. His weakness rapidly became so profound that the condition was at first thought to be hysterical, but he was seen by a physician, who discovered absence of reflexes, muscle tenderness, and peripheral sensory loss. The condition remained fairly static for three weeks and then quite rapidly became worse, with ascending intercostal pareses, facial diplegia, and bulbar weakness with pooling of mucus in the pharynx. At this stage spinal puncture showed 800 mg. of protein per 100 ml. In view of increasing difficulty in breathing, the patient, who was now under the care of Professor G. A. Smart, was given intermittent assisted respiration and 40 units of corticotrophin twice daily. Improvement was dramatic. Within 24 hours he was able to whistle, there was a surprising improvement in the power of the left arm, and his cough was stronger. Six days later breathing was normal, both arms were stronger, there was some return of power in the legs, and sensory change was beginning to shrink. Within a month of beginning treatment the only disability was partial bilateral foot-drop, rapidly improving, though knee- and ankle-jerks remained absent. As a safeguard against possible relapse, 5 mg. of prednisone was given three times daily for three weeks after the completion of 10 days' treatment with corticotrophin.

Comment.—An apparently dramatic response to corticotrophin in a severe and advancing case of polyradiculitis was followed by unusually rapid recovery.

Review of Literature

Since Stillman and Ganong (1952) first reported a case of Landry–Guillain–Barré syndrome treated with corticotrophin, there have been 34 papers in which the treatment of 68 cases has been described. Review of these shows that in 50 there has been some response and in 18 the response has been negligible. In one case the disease developed during cortisone therapy (Grant and Leopold, 1954), but in no other case was deterioration reported during treatment.

In evaluating the treatment of the Landry–Guillain–Barré syndrome with corticotrophin and cortisone, it would be desirable theoretically to have a sufficiently large series of cases under the care of one observer, so that variations in the amount, duration, and route of treatment could be standardized, allowance made for the wide variation in clinical picture, and a control series of non-treated cases arranged. Practically, however, this is impossible, and we would emphasize that we have been able to draw only a few general conclusions; the wide variations in the degree of detail of these reports have made it impossible to study the exact clinical pictures. In general, cases in which there has been a gratifying response have been reported in greater detail than those in which the response has been less dramatic, and it must be borne in mind also that there is always a tendency to report successfully treated cases while the unsuccessful ones remain in obscurity.

One further difficulty in analysing the literature of such a pleomorphic condition as Landry–Guillain–Barré syndrome is to know whether in fact the cases reported are examples of this condition. There is no easy solution to this problem, for it is difficult to draw up a list of criteria which have to be fulfilled before a particular case can be accepted as Landry–Guillain–Barré syndrome, and we have therefore included in our survey all cases so described.

In analysing the literature note has been made of the following points: sex, age, association with any other disease (such as infective hepatitis, periarteritis nodosa, etc.), severity of the disease, protein level of the spinal fluid, length of history prior to admission to hospital, duration of observation before treatment, dosage and mode of administration of the drug, and duration of treatment. These have been assessed to see if they have any bearing on the response to treatment. The severity of the disease has been arbitrarily defined as "severe" if there have been bulbar or cranial nerve involvement, phenomena such as sudden circulatory collapse sufficient to endanger life seriously, and extensive and profound limb involvement. "Moderate" is used to describe cases in which there has been no bulbar involvement but in which the limb paralysis has proceeded as far as a complete paralysis or tetraplegia. "Mild" means limb weakness only, without complete paralysis, even if widespread. It is felt that some such classification as this is useful in relating severity of disease to response to treatment.

As mentioned above, 18 cases failed to respond, but 12 were unsuitable for analysis as no details are given, and it is felt that the six cases in which details are available do not constitute a large enough group to make an analysis valid. It is not possible, therefore, to compare a group of cases which respond to treatment with a group which failed to respond. Consequently we have no means of predicting which cases are likely to respond.

The 50 cases showing response seem to fall naturally into three types: type 1, in which there is an immediate and sustained response to treatment, and in which recovery is complete within one month of starting treatment (21 cases);

type 2, in which there is a brisk initial response with early partial improvement, but in which final recovery does not occur so rapidly and the tempo of the initial improvement is not sustained (full and final recovery is usual—this type comprises 23 cases and also Cases 1 to 3 described above); and type 3 (6 cases), a miscellaneous group in which the type of response is not readily classified under the other two headings. Examples of types 1 and 2 are as follows:

Type 1.—A 17-year-old girl (Seltzer *et al.*, 1952) developed symptoms of Landry–Guillain–Barré syndrome 10 days before admission to hospital. During the next 10 days she continued to deteriorate and required tracheotomy. On the twentieth day of the illness—that is, 10 days after admission—treatment with 25 mg. of corticotrophin eight-hourly for five days was started, with effect within 24 hours. Improvement was maintained and she progressed so satisfactorily that the tracheotomy was closed nine days after the commencement of treatment, walking was possible seven days later, and 28 days after admission the patient was well enough to be discharged; a fortnight later she returned to school.

Type 2.—A boy aged 15 (Hay, 1955) was admitted to hospital with a five-weeks history of difficulty in walking, paraesthesia for a fortnight, and complete inability to walk for two days before admission. Examination showed generalized lower-limb weakness associated with loss of deep tendon reflexes. Steady deterioration, manifested by increasing weakness in both arms associated with loss of tendon reflexes, was noted during the initial period of nine days' observation, at the end of which time a course of cortisone was started. Subjective and objective improvement in both hands was noted within 24 hours. The patient was able to sit up on the fifth day, and by the 26th day was able to walk, although some weakness persisted until five months later, when full recovery of muscle power had taken place (at that time, loss of tendon reflexes in both legs was still evident).

The dramatic and possibly life-saving effect of corticotrophin or cortisone as typified in the type 1 case made us examine the cases further to decide if there were any indications of the type of case which would produce this response. However, there is no obvious difference between types 1 and 2 in sex, age, severity, spinal fluid protein, or in the dosage or route of administration of the drug employed. Cases in which treatment was started within one month of the onset show a slightly increased tendency to show a sudden and sustained response, though the difference is not statistically significant.

In fact, although the occasional dramatic response to cortisone is at least suggestive, statistical proof of its value is lacking. No control trial has been reported in the literature, and information on the natural history of the disease is curiously lacking in terms of concrete figures which can be used for comparison. Brain (1951) states that in the most favourable cases the patient may not be convalescent until from three to six months. Bradford *et al.* (1919) state: "In cases of a severe type it would seem that a period of about two months elapses between the onset of the palsy and a degree of recovery that renders evacuation feasible, and that a period as long as six months may be necessary for the patient to regain his usual health." Holmes (1917), in a series of 12 cases, noted "steady and rapid improvement which usually sets in within two or three weeks of onset. The pains and hyperaesthesia diminish quickly after the first fortnight or so, and somewhat later the power of the paretic muscles begins to return gradually." However, in none of his cases was recovery complete. Gilpin *et al.* (1936) state that the entire duration of the illness in 20 cases varied from 10 weeks to 2½ years, the average being about 6½ months. The fact that 21 cases out of 68 treated with cortisone recovered completely within one month does at least suggest that the rate of recovery is hastened as a result of the treatment.

Reported death rates vary considerably. Guillain *et al.* (1916), in their original paper, laid down complete recovery as one of the criteria for diagnosis, and Guillain (1936) much later affirmed that none of his patients died. Other authors (see Table) give a mortality rate varying from 8.7% to 42% in cases not treated with cortisone.

Of reported cases treated with cortisone or corticotrophin, only two patients have died. In one (Guiang and Leones-Guiang, 1954) the patient, a boy aged 2, was removed from hospital by his mother when he appeared to be responding to treatment. He relapsed and died at home. In the second (Fazlullah, 1956) the patient died of acute pulmonary oedema associated with adrenal failure following a complex and bizarre illness with some features suggesting polyarteritis nodosa.

Mortality Rate of Landry–Guillain–Barré Syndrome

Author	No. of Cases	Deaths
Holmes (1917)	12	2 (16·6%)
Bradford *et al.* (1919)	30	8 (26·4%)
Gilpin *et al.* (1936)	20	4 (20%)
Roseman and Aring (1941)	16	3 (18·8%)
Forster *et al.* (1941)	26	11 (42%)
Von Hagen and Baker (1953)	23	2 (8·7%)

Discussion

The general features of the condition are familiar—a rapidly or insidiously ascending flaccid paralysis, sensory impairment often being inconspicuous or absent, with muscle tenderness, loss of deep reflexes, and, in classical though not in all cases, cytoalbuminological dissociation in the spinal fluid. A considerable number of these cases show meningism, while an occasional transient extensor plantar response bespeaks extension of the lesion into the spinal cord. Frank myelitic or encephalitic concomitants are rare, but such mixed forms undoubtedly occur.

Aetiology is multiple. The condition occurs as an occasional complication, much less frequent than encephalitis or myelitis, of many specific infections, among which measles, varicella, rubella, and mumps are conspicuous examples, while its occurrence in infectious mononucleosis and infective hepatitis has recently attracted attention. Significantly, its occurrence is not limited to such infections, and it is seen also as a complication of serum sickness and of many sterile prophylactic inoculations such as T.A.B. or rabies vaccine, diphtheria toxoid, etc. (Miller and Stanton, 1954). Most cases, however, arise "spontaneously," though in many such patients there is a recent history of banal infection.

According to Von Hagen and Baker (1953), Bergamasco and Bottiglioni have claimed evidence of a neurotropic virus, but Aring and Sabin (1942) found that culture and transmission experiments were unsuccessful (quoted by Chusid and Marquardt, 1945).

Histopathological changes are maximal in the spinal nerve roots; Scheinker (1949) found that the axis cylinders in the nerve roots were enlarged owing to oedema, and that fragmentation and "corkscrew" formation were also present. Changes in the myelin sheaths—beading and irregular swelling—were also found in some cases. In the cord itself there was some swelling of the anterior horn cells and the axis cylinders, and the white matter showed marked swelling. Inflammatory reaction was conspicuous by its absence. These findings agree largely with those of Gilpin *et al.* (1936) and of Roseman and Aring (1941), and are similar to those described in polyradiculitis complicating frankly allergic disorders such as serum sickness.

An explanation of the clinical picture and the cytoalbuminological dissociation is put forward by Scheinker (1949) and by Reitman and Rothschild (1950), who suggest that the oedema of the nerve roots and trunks produces compression within the firm perineural sheaths. Hassin (1948) claims that about one-fifth of the spinal fluid is absorbed through the perineural spaces in the spinal canal, and Aring (1945) showed that in cases of Landry–Guillain–Barré syndrome the spinal fluid protein level in the lumbar theca was much higher than that in fluid obtained by

cisternal puncture. Boshes and Sherman (1953) point out also that if spinal fluid is allowed to drain off during a lumbar puncture the fluid collected in the first tube and therefore coming from low down in the spinal canal has a higher protein content than fluid collected in subsequent tubes coming from higher up. As Reitman and Rothschild (1950) point out, it is possible that the oedema of the nerve roots prevents the passage of the larger protein molecules, but allows selective absorption of the fluid, and this leads to the high protein level that Guillain regards as the *sine qua non* of the diagnosis of the Landry–Guillain–Barré syndrome.

It appears probable that oedema and nerve-root compression may give rise to the clinical features of the syndrome by an immediate loss of function of the nerve, which may be temporary and quickly reversible if the oedema subsides rapidly. If, however, pressure from the oedema persists or is unduly severe, permanent damage is produced with demyelination, recovery from which can take place only by regrowth of axons down the nerve. This view is in agreement with Seddon's (1948) concept of peripheral nerve injury.

Recovery from the Landry–Guillain–Barré syndrome therefore might be expected to take place in two stages: first, an immediate recovery resulting from the regression of the oedema, and, secondly, a more gradual recovery of some months' duration, while the axons are growing down the nerve. This "two-stage" recovery is precisely what appears to happen during treatment with corticotrophin or cortisone; the degree of recovery may be rapid and complete if the lesion is due to oedema only (this corresponds to type 1 cases noted in our analysis of the literature), or a partial recovery may be followed by a longer period of disability during regeneration of the demyelinated axon (type 2).

This perhaps rather speculative interpretation of the histological changes observed in the disease provides at any rate a plausible explanation for the two main types of response to cortisone which we have noted above.

Stanton *et al.* (1953) have pointed out that Landry–Guillain–Barré syndrome can be related closely to other acute "inflammatory" diseases of the C.S.N., and possibly to allergy, and since all these syndromes, whether mixed or pure, arise on a similarly non-specific aetiological basis it seems possible that to regard them as varying manifestations of an "allergic neuraxitis" may be something more than merely a facile oversimplification.

In this context a case seen by one of us (H. M.) is of interest:

A physician aged 49 was given 1,500 units of antitetanic serum into the left upper arm, and six days later developed signs and symptoms of serum sickness, with joint pains, high fever, and sweating. On the second day he developed a headache with neck stiffness and photophobia, and became mentally confused. Within six hours of the onset of the headache he was given cortisone and salicylates, a therapeutic response occurring within six hours. Next morning he was so much better that the cortisone was stopped after 50 mg. had been given. The same evening he developed severe pains and paraesthesiae in all limbs, and 48 hours later marked weakness of the right arm, loss of both ankle-jerks and of the left knee-jerk, and impaired vibration sense in the toes. A diagnosis of polyradiculitis complicating serum sickness was made but no lumbar puncture was done. He was given cortisone again as he appeared to be deteriorating, and again dramatic clinical improvement occurred within 12 hours, power recovering and paraesthesiae and pain completely disappearing. Within three days the deep reflexes had also recovered completely.

The Landry–Guillain–Barré syndrome appears, then, to belong to a spectrum of diseases of the nervous system which are secondary to a wide variety of aetiological agents but which have in common a probable basis of allergy. The effect of cortisone is unpredictable, inconstant, and difficult to analyse statistically, but, as in other allergic disorders, its use is justified on theoretical grounds as well as in practice.

Summary

Five cases are described of the Landry–Guillain–Barré syndrome treated with cortisone or corticotrophin.

The literature recording similar cases is reviewed.

The response to the drugs is unpredictable and inconstant, and the material available is not suitable for statistical analysis. However, in 21 out of 68 recorded cases complete recovery occurred within a month. This is unusual in untreated cases. Twenty-three other patients showed a rapid initial response followed by slower subsequent recovery. Arrest of deterioration is usual, and the mortality in this admittedly heterogeneous collection of treated cases was much lower than in previously recorded series.

The aetiology and pathology of the disease are discussed. It is considered that the clinical features, pathology, and response to treatment are compatible with an allergic pathogenesis.

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PULMONARY FUNCTION BEFORE AND AFTER SEGMENTAL RESECTION AND AFTER "IDEAL" PNEUMOTHORAX TREATMENT*

BY

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Before the advent of antituberculous drug therapy, pulmonary tuberculosis remained a serious disease and the available methods of treatment were limited. In that era the success of treatment was justifiably chiefly assessed by such simple criteria as survival of the patient over a number of years (Foster-Carter, Myers, Goddard, Young, and Benjamin, 1952). With modern advances, which so greatly increase the effectiveness and types of treatment, the patient almost invariably survives and the merits of the various forms of treatment must be assessed on more exacting grounds. These will include freedom from relapse, persistently negative sputum, and return to full activity without any symptoms. In fulfilling this last criterion the pulmonary function of the patient is very important, and as the years of survival approach the normal span this importance will increase. Defects of function that cause little trouble in early life may well produce symptoms in later years, when irreversible changes have continued over a long period and been added to the normal degenerative effects. It is thus now desirable that in the assessment of any form of treatment for tuberculosis it should be considered not only from the point of view of its success against the disease process but also the success with which it preserves, or at least does not further interfere with, normal lung function.

Pneumothorax played a most important part in the preservation of life and health in the days before antituberculous drug therapy and resectional surgery. Recent studies (Scadding, Nicholson, and Hoyle, 1951; Foster-Carter *et al.*, 1952) leave no doubt about this aspect of the matter. However, the complication rate has been high, and, as Savage and Fleming (1955) have mentioned, complications may have ruined the health of the patient and caused marked loss of pulmonary function and chest-wall deformity. The use of antituberculous drug therapy in conjunction with pneumothorax (Birath, 1953; Scadding, 1955) will undoubtedly reduce the number of these tragedies, but the functional results of no such series have yet been reported, and with the loss of popularity of pneumothorax as a form of treatment it will be some time before enough cases can be collected.

Fleming and West (1954) have confirmed Pinner, Leiner, and Zavod's (1942) observation that even trouble-free pneumothoraces may cause gross reduction in function which can only certainly be known by measuring the differential lung function. Functional loss is apt to be much greater where there has been an effusion, even though it has appeared to clear very satisfactorily. Any such loss of function is an unfortunate accompaniment of successful treatment of the disease process, particularly if the original lesion might have been adequately treated by other methods.

Resection has been increasingly used in the treatment of pulmonary tuberculosis, and in recent years has been extended particularly into the field of localized lesions which can be removed by resection of the one or two segments in which they lie. Many series reported (including Overholt, Woods, and Wilson, 1953; Thompson, Savage, and Rosser, 1954; Eerland and Seghers, 1955; Douglass, Bosworth, Judd, and Chang, 1955) demonstrate that in good hands the mortality and the morbidity rates are very low.

In the present study pulmonary function has been assessed before and after thoracotomy for segmental resection, and the results are compared with those obtained in cases of uncomplicated pneumothorax treatment. Few of the pneumothorax cases had the benefit of effective modern antibacterial treatment.

Pneumothorax

At Sully Hospital routine pneumothorax maintenance treatment is not carried out and cases available for study were therefore patients in whom the pneumothorax had either failed to control the disease satisfactorily or who had developed contralateral activation and had then been admitted for further treatment. A total of 62 cases of old pneumothorax have been studied from the point of view of pulmonary function, and from these were chosen all those which had had unilateral collapse for localized disease and which at no time in the course of treatment had developed any detectable fluid or other complication. It is thought that these ideal cases should closely resemble cases of pneumothorax which have the added benefit of anti-tuberculous drug therapy.

Sixteen such cases (about 25% of the total) fulfilled these criteria. In 10 of these (62%) there was localized contralateral disease, the presence of which would tend, because of the method of expressing differential lung function results by the percentage of total function, to minimize the apparent functional loss on the pneumothorax side.

In these 16 cases the extent of the parenchymal disease under the pneumothorax was of the same order as that in the segmental resection series, and the losses of function due to the disease process would be similar.

Segmental Resection

Cases were chosen in which, after full assessment, it was decided that segmental resection was indicated and that the removal of one or two segments or less would be sufficient. In most cases this procedure would remove all known disease. The 27 cases formed a consecutive series, and all cases had had prolonged antituberculous drug therapy and showed cavity closure and radiological stability, and were sputum-negative repeatedly. These patients had the purpose of the study explained to them. It was made clear that their co-operation would be entirely voluntary and that the investigations would be of no particular value to their individual case. It was also explained that the necessary information would be obtained only on repetition of the tests after operation. Following on previous studies (Fleming and West, 1954) showing that there were no adverse effects and that the investigation was no great ordeal to the patient, it was thought justifiable to use these methods for purely research purposes. The series of cases studied by bronchospirometry with the Carlens catheter at this hospital now stands at over 400, and the complete absence of complications reported in the first 125 of this series is fully substantiated.

Methods

The chest was examined with particular attention to movements and breath sounds, and diaphragmatic movement was studied fluoroscopically. Investigation of the maximum breathing capacity and differential function was carried out by previously described methods (Fleming and West, 1954).

*The substance of this paper was communicated to the meeting of the Thoracic Society of Great Britain in London in February, 1956.

Segmental resection was in all cases performed at Sully Hospital in the latter part of 1954 and early 1955, using the methods described by Thompson *et al.* (1954). The investigations were repeated as late as possible after operation. This was often little more than six weeks, as at that stage most of the patients were transferred to widely scattered institutions for graded convalescence. The average time after operation was 8.7 weeks (range 6 to 20 weeks) and the grade of activity of the patients was much the same as before operation.

The number of segments removed in each case averaged 1.3, with a range of 0.5 to 3 (only one case had an upper lobectomy, because of a caseous node adherent to the upper lobe bronchus). The segments were all in the upper lobe or the apex of the lower lobe, with one exception when a lateral basal segment was removed.

Results in "Ideal" Pneumothorax Cases

The group consisted of 16 patients (5 women, 11 men) with an average age of 30 years and a range of 21 to 49 years. The average value of the maximum breathing capacity was 106.6 litres a minute (range 55 to 150).

The average duration of the pneumothorax was 3.09 years (range 1 to 4.5 years) and the average time that had elapsed since the lung expanded was 3.2 years (range, 2 months to 13 years). Five pneumothoraces were on the right side and 11 on the left.

From bronchospirometric studies the departure of the function on the pneumothorax side from the average normal values (right side = 55%; left side = 45%) (Baldwin, Cournand, and Richards, 1948) was as shown in Table I.

TABLE I.—*Departure of Function on Pneumothorax Side From Average Normal Value. Standard Deviations are Given in Parentheses*

Oxygen uptake	−10·86% (6·2); range	−20 to −1
Minute-ventilation	−7·46% (5·9); „	−23 „ +5
Vital capacity	−8·3% (5·45); „	−16 „ −4

It should be remembered that over 60% of these cases had contralateral disease, which would cause a small loss of function in the "more normal" lung and tend to diminish the apparent loss on the pneumothorax side when the results are expressed in this way.

Results in Segmental Cases

The average age of the 27 patients in this group was 27 years (range, 15 to 54 years), and there were 9 women and 18 men. The age and sex distributions are thus very similar to those in the pneumothorax group. In 17 the disease was on the right side and in 10 on the left.

Bronchospirometric studies before operation showed the functional loss as compared with the normal (R.L. = 55%; L.L. = 45%) as shown in Table II. This loss is entirely due to the disease process. The average number of segments found to be diseased at operation was 1.3 (range 0.5 to 3). From a consideration of the detailed operation reports and the pathological findings on the resected material Table III is composed. In 26 cases (96%) caseous material

TABLE II.—*Departure of Function on Side With Segmental Disease from Average Normal Value. Standard Deviations are Given in Parentheses*

Oxygen uptake	−4·98% (4·9); range	−16 to +5
Minute-ventilation	−3·42% (5·7); „	−13 „ +6
Vital capacity	−2·8% (4·73); „	−10 „ +5

TABLE III.—*State of Expansion of Diseased Segments*

Predominantly well aerated	17 (63%)
„ collapsed and fibrosed	10 (37%)

was found in the resected segment, but it is evident that in most cases this segment was by no means entirely destroyed and functionless. This is fully confirmed by the bronchographic appearances, which in the 17 cases with an aerated segment showed either no abnormality or minor changes in the subsegmental bronchi, while in the 10 cases of collapsed segment there was invariably bronchiectasis of the segmental bronchus. There was a close relationship between the appearances in the bronchogram and the state of aeration of the segment.

In these cases, taken as a group, there is thus only a small amount of destruction of lung tissue, and in only 37% of them was the involved segment largely destroyed.

Other changes that might adversely affect function were also looked for, but none were found. Localized adhesions over the lesion, present in 48%, had no apparent effect on function.

Findings After Segmental Resection

Chest movement and breath sounds were in all cases normal before operation. After operation, at the time of the repeated function studies, the findings were normal in 89%. In all cases with less than normal chest movement (11%) there was considerable improvement in the ensuing months.

Diaphragmatic Movement.—Before operation this was normal in all except two cases in which the phrenic nerve had been crushed two years previously. The early results after operation are shown in Table IV. In the following

TABLE IV.—*Diaphragmatic Movement in Early Post-operative Period*

Normal full range	11 (41%)
50–80% of normal	10 (37%)
25% of normal	3 (11%)
Fixed but no paradox (2 previous phrenic crushes)	3 (11%)

months all cases with 50% or more of normal function improved until the diaphragm movement appeared entirely normal, though in a few cases this took nearly a year to be achieved. In the cases with less than 50% of normal movement the range of excursion increased steadily, usually to the region of 60%, though the cases with previous phrenic interruption showed no such change. There was no obvious relationship between this impairment of diaphragmatic function and the immediate post-operative course or the functional results, though under conditions of stress it is likely that there must have been considerable effect on function.

Maximum breathing capacity had fallen by an average of 4.8% (S.D. = 11.4; range −47 to +24) of the pre-operative value. This is surprisingly good considering that the patients had not only lost some functioning lung tissue but were only two months removed from a thoracotomy and still on a very modest grade of activity. The average maximum breathing capacity was 120 litres a minute in 27 cases. This is somewhat higher than in the pneumothorax group.

Bronchospirometric Studies

In 27 cases the loss from the normal value (R.L. = 55%; L.L. = 45%) on the affected side is as shown in Table V, which does not take into account the change from the actually observed pre-operative figure which is discussed below. The losses presented here arise from the disease plus the operation. Table VI shows the loss of function

TABLE V.—*Average Departure of Function on the Operated Side from the Normal Figure in 27 Cases. Average Number of Segments Removed=1.3 Per Case. Standard Deviations are Given in Parentheses*

Oxygen uptake	−8·1% (4·7); range	−18 to +5
Minute-ventilation	−5·6% (5·75); „	−20 „ +5
Vital capacity	−8·75% (5·5); „	−19 „ +7

TABLE VI.—*Reduction of Function of Operated Lung Following Resection. Standard Deviations are Given in Parentheses*

Oxygen uptake	−3·2% (3·66); range	−9 to +3
Minute-ventilation	−2·2% (6·4); „	−11 „ +6
Vital capacity	−5·2% (4·7); „	−12 „ +5

on the operated side following resection. The figure is obtained by working out the percentage of the total function contributed by that lung in each case and subtracting the post-operative from the pre-operative result. These losses represent those due to the operation alone.

Loss of Function

The methods already used in presenting the results in this paper are those usually employed in the expression of

results and changes of function measured by bronchospirometry. However, such methods refer only to the fraction of the total function being performed by the lung under consideration and give no accurate picture of the amount of function lost by that individual lung due to any procedure to which it has been subjected. In the present study the figures already recorded are a useful index for comparison with the pneumothorax series and with other series in the literature where other methods of treatment have been used. We are now chiefly interested in the actual loss of function in the operated lung due to the segmental resection and compared with the measured pre-operative function.

In working out the percentage function of, for instance, the left lung in the ordinary way, the following simple fraction is used :

$$\% \text{ function contributed by the left lung} = \frac{L}{L+R} \times 100,$$

where L is the function of the left lung in absolute values and R is the function of the right lung in absolute values.

On repeating such function studies the state of the patient is rarely the same as in the first examination, and even in the normal and unchanging lung the recorded absolute measurements of function have changed. It is for this very reason that the results of such tests are usually expressed as a percentage of the total function.

In the cases in this series post-operative control was good, and there was no reason to suspect that any change in the function of the healthy lung had occurred between the pre-operative and the post-operative studies. Presuming this to be so, it is possible by simple proportion to obtain a "corrected" value for the absolute figure of the function recorded on the operated side. This is then directly comparable with the absolute figure obtained before operation, as they are both with reference to the same figure—that is, the initial absolute figure for the unoperated side.

In the case of the left lung

$$\text{"Corrected" } L_2 = \frac{L2}{R2} \times R1,$$

where R1 is the pre-operative absolute value for the right lung, R2 is the post-operative absolute value for the right lung, and L2 is the post-operative absolute value for the left lung.

This calculation is carried out separately for the oxygen uptake, the minute-ventilation, and the vital capacity.

The percentage loss of function of the left lung is then

$$\frac{L1 - \text{"Corrected" } L2}{L1} \times 100,$$

the result giving an easily recognizable estimate of the amount of function that the individual lung has lost from the procedure.

I am not aware of results being previously reported in this way, but it has obvious advantages, and, further, allows the loss per segment removed to be calculated.

Table VII shows the loss of function per segment removed. This is expressed as a percentage of the pre-operative function of the operated lung (100%). For the compilation of Table VII the total percentage loss of function in the lung is divided by the number of segments removed. For these purposes anything less than a segment was counted as 0.5, the apical lower as 1.5, and the left apico-posterior as one segment. In the intact lung this gives 10.5 segments on the right and 9.5 on the left, so that each segment is contributing approximately 10% of the function of one lung. The results given in Table VII are thus very satisfactory, as the loss of oxygen uptake is much less than that figure and the ventilation only slightly more. The loss of vital capacity is somewhat greater, but this may be largely accounted for by the early stage in the post-operative period at which the tests were done, and the already-mentioned improvement in diaphragmatic movement in many cases in the ensuing months would suggest that the vital capacity would improve with time.

TABLE VII.—*Percentage Loss of Lung Function Per Segment Removed. Standard Deviations are Given in Parentheses*

Oxygen uptake ..	−7·13% (17·3); range −26 to +14
Minute-ventilation ..	−10·8% (27·2); „ −40 „ +10
Vital capacity	−17·5% (20·0); „ −35 „ +22

It should be remembered that the actual disease in the segment had caused a small loss of function from the average normal figure, and this would tend to reduce the loss demonstrated after removal of that portion of the lung.

The higher standard deviations in Table VII are largely due to the fact that the length of the scale in use has been doubled as compared with previous tables (previous tables 0–50%, this table 0–100%).

This method of presenting the results throws markedly into prominence losses that are not at all conspicuous in the standard method of presentation.

An average good result is illustrated by the following case.

A woman aged 26 had cavitated disease in the apical segment of the right lower lobe. Bronchography showed bronchiectasis of the segmental bronchus, and at thoracotomy the segment was found to be collapsed and fibrosed, with a caseous lesion. Fig. 1 shows the traces taken at bronchospirometry and the results obtained.

These figures show a moderate pre-operative decrease in function (6–9%) due to the destruction of the segment. This is followed by an increase in the maximum breathing capacity and a very small further loss of function (1–2%) when expressed in the usual way. For this single and functionless segment (counting as 1.5) the percentages of loss of the functions of the right lung were 4.3, 4.0, and 2.7 respectively.

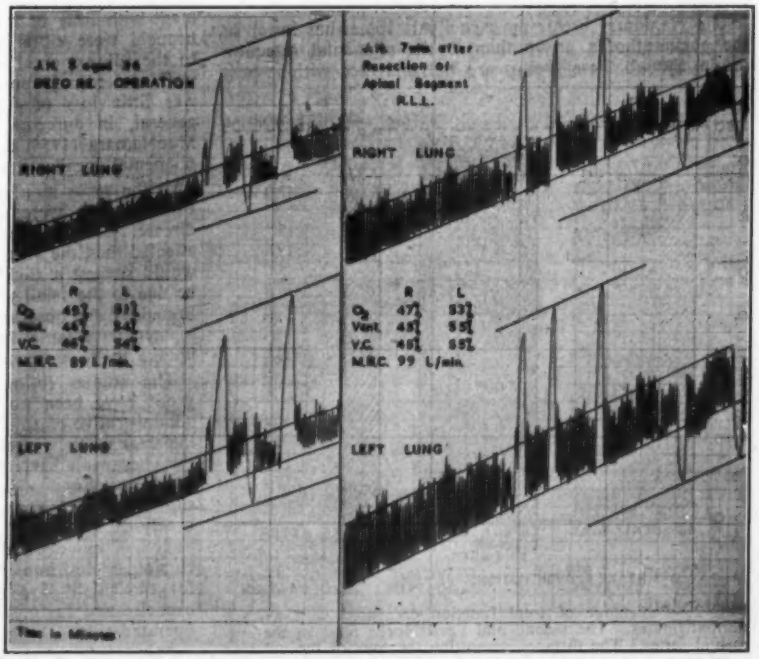

FIG. 1.—Example of average good functional result after segmental resection. Bronchospirometry traces and results before and after segmental resection.

Discussion

The pneumothorax cases are not the most satisfactory series as a basis for comparison, but this is a difficulty commonly met with. As Gaensler, Watson, and Patton (1953) point out, the really successful cases of re-expanded pneumothorax are not hospitalized and are unlikely to be accessible for study, while most of the cases still connected with hospitals are in some way complicated. It should be clearly realized that the cases in this group are ideal pneumothoraces and by no means represent the average result in the past. They are intended to give only an indication of the loss of function that may be expected from a pneumothorax induced at the present time with the advantages of antituberculous drug therapy, and they do not give any indication of the state of affairs to date. Gaensler *et al.* (1953) found that in 62 patients who had at one time had a therapeutic pneumothorax the re-expanded lung contributed on the average only 30% of the total oxygen uptake. They also found, as encountered in the 62 cases in this study, that many of these cases were complicated in various ways and the average was produced from a great variety of results. The 16 cases were selected to avoid this difficulty as much as possible. The comparison of them with the resection cases is admittedly open to criticism, but it is suggested they do provide some yardstick on which to judge the functional results following surgery.

TABLE VIII.—*Percentage Loss of Function Below Normal Values. Mean Values. Standard Deviations are Given in Parentheses*

	M.B.C. (l./min.)	Oxygen Uptake	Ventilation	Vital Capacity
Ideal pneumothorax (16 cases)	106·6	−10·86 (6·2)	−7·46 (5·9)	−8·3 (5·45)
Segmental lesion (27 cases)	—	−4·98 (4·9)	−3·42 (5·7)	−2·8 (4·73)
Segmental resection (27 cases)	120	−8·1 (4·7)	−5·6 (5·75)	−8·75 (5·5)

Table VIII gathers together the results shown in Tables I, II, and V for ease of comparison. These results are diagrammatically presented in Fig. 2, where the average normal value is taken as 50%. The numbers on top of the columns state the loss from this value.

The maximum breathing capacity is somewhat lower in the pneumothorax group than in the segmental resection group, though these groups are well matched with respect to age and sex. In the pneumothorax group the slightly greater loss of oxygen uptake than ventilation and vital capacity suggests that pleural factors are of importance even in this group without definite pleural complications. It can be seen that the deviation of the function from the average normal value is slightly less in the cases subjected to segmental resection than in the pneumothorax cases. Thus, from the point of view of function segmental resection is rather preferable to the best that has been offered with pneumothorax treatment. This is emphasized when it is remembered that the loss of function due to contralateral disease is concealing some of the loss due to the pneumothorax. It is not intended to discuss at any length the more general aspects of the merits of these treatments, but it is relevant to mention that in 96% of the cases in this series of resections actual caseous disease was still present after many months of antituberculous drug therapy. Such caseation must remain a constant menace to the health of the patient and is surely better removed if this can be done with safety.

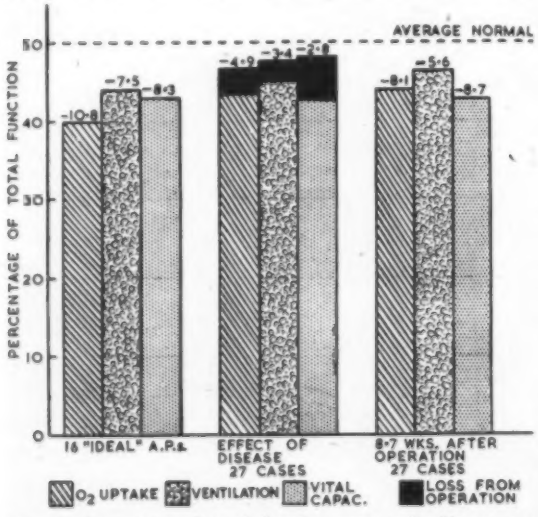

FIG. 2.—Percentage of total function compared with average normal figures. The second and third blocks refer to the segmental series. The distance separating the tops of the columns from the average normal line represents the reduction in function. The loss following operation is very small.

Really prolonged drug treatment appears to reduce the number of such cases in which tubercle bacilli can be cultured from the residual caseous lesions, and if these findings are further substantiated the attitude to resection will obviously need modification.

In assessing cases before surgery, when radiological stability has been achieved after some months of antituberculous drug therapy, it has been possible, using all previous radiographs, two-plane tomography, and bronchography, to come to an accurate estimate of the extent of the disease. In the present cases the assessment made at thoracotomy was identical with that made before operation. This experience is, with very few exceptions, borne out by large numbers of patients at Sully Hospital and is contrary to the findings of Logan (1955), who reported that the correlation was good in only slightly more than 50% and fair or poor in the rest. In our cases bronchography with watery propyliodone ("dionosyl") has proved a safe procedure, and in many hundreds of cases there have been none of the unfortunate experiences of the type recorded by Perry (1955) with oily media. In this series the cases in which bronchiectasis of the segmental bronchus was present have invariably had a contracted and fibrosed segment with little or no function. In those cases where the bronchi were either normal or the changes were limited to the subsegmental level, the segment was predominantly well aerated, of approximately normal volume, and there was little loss of function. Our experience is thus, in general, in agreement with that of Shaw, Collins, and MacNamara (1954) on the value of bronchography in the segmental localization of tuberculous disease.

In the series as a whole, before operation (Table II and Fig. 2) there were small losses of function due to the disease. In these the oxygen uptake was slightly more affected than the ventilation and vital capacity, a fact which would suggest a slight pleural factor but is more likely to be due to the small amount of bronchiectasis. This is confirmed by the observation that in the individual cases with segmental collapse there was a tendency for the oxygen uptake to be more affected than usual.

The studies following segmental resection could with profit have been postponed to a later date, but for the administrative reasons mentioned this was not possible. At the stage of eight weeks after thoracotomy it is unlikely that the chest wall has returned to its maximum mobility, and the observations made on the movements of the diaphragm show that at this stage it is impaired to some degree in nearly 60% of cases, but that in all it improves over a period of months and in 78% it returns to the normal excursion. This impairment of function probably accounts for the small drop (−4.8%) in the maximum breathing capacity and for much of the loss of vital capacity on the operated side.

The results of the differential function studies following resection recorded in Tables V and VI and Fig. 2 show a small loss of function which is similar to that recorded for

small numbers of segments by Taylor, Petter, and Whittenberger (1955), using the same methods of presentation.

These losses are somewhat less than those described by Gaensler *et al.* (1953) after resection of one or two segments. They also fail to show any striking excess of loss of oxygen uptake over ventilation, a finding which the work of Gaensler *et al.* (1953) prompted them to suggest that much of the loss of function following segmental resection was due not so much to decrease of functioning lung tissue as to post-operative haemothorax, parietal pleural fixation, and eventual fibrothorax. The figures presented here do not support this contention, and suggest that the great part of the loss of function is due to removal of lung tissue. It is felt that the careful technique (Thompson *et al.*, 1954) aimed at the early and complete re-expansion of the lung and the avoidance of the accumulation of any fluid in the chest is of the greatest importance in achieving this result.

It is apparent that the usual method of presenting the function of one lung as a percentage of the total function, while being useful in isolated studies, has in follow-up studies the disadvantage of obscuring changes that have taken place in the only lung which has been subjected to procedures likely to change the function. It is surprising that the method described here has not been used in previous reports on function following surgery. While the mathematics involved in bronchospirometry results are of the simplest, they are not always so regarded by those not familiar with them, and one is therefore reluctant to introduce a different method of presentation. However, the calculation of the change in function of the actual lung under consideration is not only a more useful but also a simpler and more easily understood concept. This enables (Table VII) the actual percentage loss of the lung per segment removed to be calculated. The results so obtained have been shown to be of a very reasonable order, particularly as in 63% of the cases the lung tissue was predominantly aerated and functioning.

The losses from segmental resection are similar to those reported for extrapleural pneumothorax (Gaensler and Strieder, 1950) and for five-rib thoracoplasty (Lindahl, 1954).

In this study the rather wide scatter of the results as indicated by the high standard deviation and range is a matter of some concern. Other reports do not include estimations of the standard deviation, but Taylor *et al.* (1955) give their range of values, and these appear to be much the same as those observed in the present study. Such scatter would appear to be inevitable in this type of biometric work.

Summary

From 62 cases of old pneumothorax studied, 16 (about 25%) were chosen as being "ideal" and the functional results analysed; 10 of these also had contralateral disease.

Twenty-seven cases with localized tuberculosis were studied before and after segmental resection. Physical signs, fluoroscopy, maximum breathing capacity, and differential lung function were investigated in the early post-operative period (8.7 weeks average).

In the "ideal" pneumothorax series the average loss of function was a little greater than that due to segmental resection.

In the segmental series the loss of function due to the disease was small, and in 63% of cases the segment was predominantly well aerated. The bronchographic appearances were closely related to these findings.

After operation there was often limitation of the movement of the diaphragm, but this almost invariably improved in later months.

The loss of function after resection was small. A method of expressing this as a percentage of the initial function of the operated lung is described and the percentage loss per segment is calculated. This demonstrates that the loss is of the order to be expected from the removal of the lung tissue alone.

The extent of the disease can almost invariably be accurately assessed by study of all previous radiographs, two-plane tomography, and bronchography.

Thanks are due to the patients whose willing co-operation has made this study possible and to the consultant staff of Sully Hospital for permission to investigate patients under their care. I thank Dr. L. R. West, who constructed the excellent equipment used and whose practical assistance has been invaluable.

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TOTAL COLECTOMY AND ILEO-RECTAL ANASTOMOSIS IN DIFFUSE ULCERATIVE COLITIS

BY

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In view of the increasing incidence of surgery in the treatment of ulcerative colitis it seems an appropriate time to record the results achieved by total excision of the colon and restoration of continuity by ileo-rectal anastomosis. The results reported in this paper are those of a consecutive series of 47 cases of the diffuse disease involving the colon and the rectum treated by this method since 1951. Before operation every patient had been under experienced medical treatment, and surgery was undertaken only because this had failed to arrest the progress of the disease. On some desperately ill patients operation was performed as an emergency life-saving measure.

The concept of the preservation of the rectum in all except the very rare case, so that a normal route of evacuation may be established, has been referred to previously (Aylett, 1954, 1955). It can only be justified if it can be shown that: (*a*) the procedure can be carried out with low mortality and low post-operative morbidity; (*b*) the large majority of the patients return to full health and full economic ability and that the number of bowel actions, increased as a result of the excision of the colon, interferes little if at all with their lives; (*c*) the inflammatory changes in the rectum resolve in most cases; and (*d*) should the disease persist or recur in the remaining rectum to an extent sufficient to endanger health an ileostomy can be established and the rectum removed without risk.

It is proposed that each of these questions shall be answered by reference to the series under review, because if they can be replied to satisfactorily the suggested method of treatment must surely be regarded as preferable to the routine total ablation of the whole of the large intestine and the formation of a permanent ileostomy without any attempt to restore the continuity of the intestinal tract. However great the improvement in modern ileostomy-bag design, such a stoma is a very real handicap to inflict upon a patient often entering the threshold of his or her full adult life, and, moreover, it is one that is not infrequently the source of both major and minor surgical complications.

Can Total Colectomy and Ileo-rectal Anastomosis be Carried Out with Low Mortality and Morbidity?

On setting out upon this procedure it seemed that a direct anastomosis of ileum to rectum after removal of the colon would be fraught with the danger of failure of union

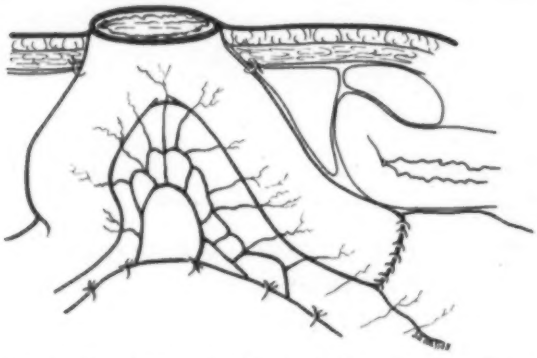

FIG. 1.—Line drawing showing the "safety-valve" temporary ileostomy made in continuity a few inches from the end-to-end anastomosis of ileum and rectum.

or at least of leakage, with consequent pelvic cellulitis and fistula formation. The end of the rectum is friable, inflamed, and oedematous, so that if the anastomosis was to be subjected to any increased intraluminal pressure, such as might readily occur in the immediate post-operative period as a result of the development of a minor degree of ileus, the possibility of disruption of an uncertain suture line appeared to constitute a very real risk.

FIG. 2.—Photograph showing the position of the temporary ileostomy with a disposable ileostomy bag in position.

It was thought that this risk would be eliminated if a side-to-side anastomosis of ileum to rectum was carried out and if, after mobilization of the rectum by division of the upper thirds of its lateral ligaments and of its posterior attachments, its upper end was to be exteriorized on the anterior abdominal wall, preferably through the lowermost part of the paramedian incision. A "safety-valve" would thus be formed through which gaseous and intestinal content would discharge if the intraluminal pressure became raised. Thereby the anastomotic line would be protected from the effects of any distension.

This method was therefore adopted, and in no case in which it was employed did any leakage occur from the line of anastomosis. The only case of leakage in the series was in a patient with lesser inflammatory changes in the rectum in whom, misguidedly, anastomosis without this safety-valve was considered safe. In spite of drainage down to the anastomotic site the patient developed a pelvic abscess and a faecal fistula. Although final recovery resulted, the fistula required full exploration and weeks of drainage to effect its ultimate closure.

More recently we have carried out an end-to-end anastomosis of the ileum to the rectum decompressing the line of suture by means of a temporary ileostomy made in continuity and established through a separate stab incision in the left iliac fossa (Figs. 1 and 2). It is, of course, essential in such cases to obliterate the gap existing between the ileostomy and the lateral abdominal wall to prevent the possibility of post-operative obstruction resulting from the insinuation of coils of small intestine into this hiatus. This method was adopted because the closure of the proctostomy had at times proved difficult, and in some cases several operations were required to effect a final closure. The temporary ileostomy, sited as it is some distance away from the anastomosis, is readily closed, and it seems that as this method protects the anastomotic line equally well it will be the operation of choice.

The second way of achieving operative safety is, in the severely or desperately ill case, to carry out the procedure in two stages. We believe that in such cases the essential requirement is the excision of the colon, and we consider that the formation of an ileostomy alone has no place in the emergency surgery of ulcerative colitis. Haemorrhage and grave toxaemia can continue, and disruption of the colon proceed, in spite of the presence of a defunctioning ileostomy. The excision of the colon, therefore, must be undertaken, but owing to the grave condition of these patients further operative time must not be expended in attempting an immediate restoration of continuity. Thus, as a routine in these cases, following the colectomy, the upper end of the rectum is exteriorized through the lower end of the paramedian incision and the terminal ileum through the same wound at a slightly higher level (Fig. 3). The union of the two exteriorized ends, which does not involve the opening of the general peritoneal cavity, is undertaken when the patient has recovered from the effects of his or her colitis.

FIG. 3.—Photograph showing completion of first stage of two-stage procedure. Ileum and upper end of rectum have been exteriorized through lower end of paramedian incision.

With these techniques and with the closest attention to post-operative care the mortality has been well under 5%, 2 of the 47 patients having died. In one the cause of death was obstruction following secondary suture of a burst abdomen. The second patient died from anuria. He was admitted with acute ulcerative colitis and an associated complete prostatic obstruction and uraemia. Whilst the bladder was being decompressed and the colitis treated with

cortisone perforation occurred. Emergency colectomy was undertaken, but anuria subsequently developed.

Post-operative morbidity has not been excessive. One patient had three episodes of obstruction—two due to adhesions and one to the volvulus of the small intestine—in the first post-operative month. Two patients developed intestinal obstruction two years after their operation, the result of band formation. Five operations were therefore undertaken for obstruction and all three patients recovered. In another patient secondary haemorrhage into the pelvis 10 days after operation necessitated reopening the abdomen for its control.

One patient who had had a side-to-side anastomosis of ileum and rectum, with the formation of a safety-valve proctostomy, developed a fulminating staphylococcal enteritis with associated heavy infection and disruption of the abdominal wall. As it seemed likely that the anastomosis might break down it was undone and the end of the ileum brought out through a separate incision in the left iliac fossa. The patient recovered with antibiotic therapy, and restoration of continuity will be undertaken subsequently.

In seven patients closure of the safety-valve proctostomy was not effected at the first attempt, and in one patient five operations were required for its final closure. The method of eliminating this difficulty has been referred to. A further patient referred to above, in whom a safety-valve was not included in the operation, developed a faecal fistula.

Mild perianal excoriation has been present in four cases, one of which was complicated by a minor fistula-in-ano, which after operation healed completely. All these cases have responded to local applications of ointment.

With the exception of one case in which a transient arthritis of the knee-joint occurred six months after operation and which could have been attributable to other causes apart from the colitis, no systemic complications have resulted.

Do the Majority of Patients Return to Good Health Without an Excessive Number of Bowel Actions?

In the assessment of this question in respect of the 45 live patients in this series, five have been excluded, as the final stages of their treatment have not yet been completed. Forty patients therefore remain for consideration. These have been divided into four categories as follows :

1. Those whose health has returned completely, who have regained or in some cases exceeded their normal weight, who are engaged fully in their former occupations, who enjoy a normal social life, and whose number of bowel actions do not exceed six in 24 hours. Many, as will be seen from the table, have a smaller number of evacuations.

Number of Bowel Actions Experienced by Patients in Category 1

No. of bowel actions in 24 hours	1	2	3	4	5	6
No. of patients	1	1	2	7	10	8

Isogel, and in some cases the occasional codeine tablet, is all that is required to control their bowels. Twenty-nine, or approximately 70%, of the cases in this series fall into this category (Fig. 4).

2. Those who are in good health, who have gained weight, who are back to work, but whose number of bowel actions, varying between 7 and 10 in 24 hours, limits slightly their full return to a normal life. Nevertheless in this category is included an engine-driver, a long-distance lorry-driver, and a foreman builder. Our experience has been that after about 12 months some in this category join those in category 1. At present there are six patients in this group, or 15% of the total.

3. Those who have returned to good general health but whose number of bowel actions is over 10. There are two female patients in this group, and both have weak sphincters. Each is 67 years of age. One suffered from complete prolapse of the rectum in addition to her colitis and prior to operation had not been outside her house for two years. The excessive number of bowel actions in this small group would undoubtedly seem to be associated with laxity of the sphincters, and the urgency with which the frequency is associated also suggests this. In the older female patient with patulous sphincters a permanent ileostomy may be preferable, but neither of the patients in this group would consider this step, as in spite of their disability they appear to manage reasonably well.

4. Those who at present have a residual proctitis producing symptoms. In this category are three patients, or approximately 8% of the series. Although two of these patients have been back to full work and the third, a girl, has been attending school with few absences, periodic anaemia has had to be treated. The two adult patients are now under treatment with intrarectal ultra-violet light, and the degree of subsidence of the inflammation in the rectal mucosa has so far been most pronounced.

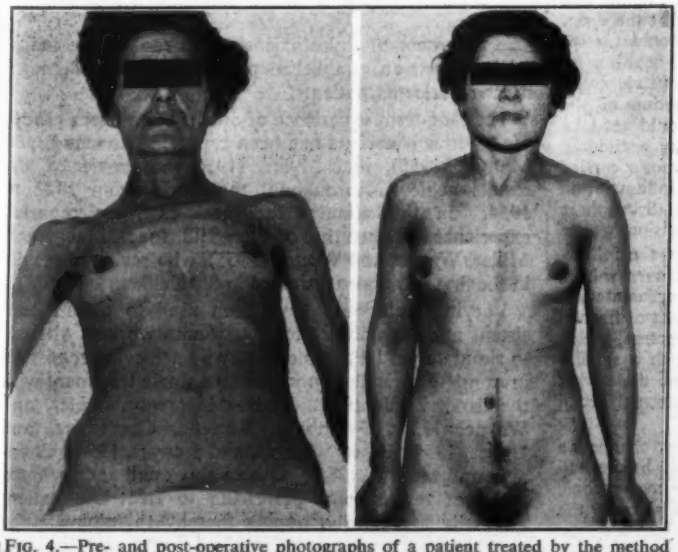

FIG. 4.—Pre- and post-operative photographs of a patient treated by the method described. Her bowel is opened once in each 24 hours. Pre-operative weight 5 st. 11 lb. (36.7 kg.), post-operative weight six months later 8 st. 9 lb. (54.9 kg.).

Do the Inflammatory Changes in the Remaining Rectum Resolve in Most Cases?

We had noted, before undertaking ileo-rectal anastomosis, that in certain cases treated successfully by a medical regime the gross ulcerative changes visible on sigmoidoscopy subsided with apparent re-epithelization of the ulcerated areas. In such cases the resolution appeared to follow the control of the toxaemia associated with the disease and the return of the patient to normal health.

Biopsies from the rectum taken before and after a successful end to medical treatment confirmed our visual impression that the wall of the bowel had in fact become re-covered with epithelium. It was indeed true that the normal regimented pattern of mucosal glandular structure was not re-formed, but nevertheless the underlying partially fibrosed rectal wall did become covered with epithelium.

As a result of this observation it seemed reasonable to suppose that if in those cases

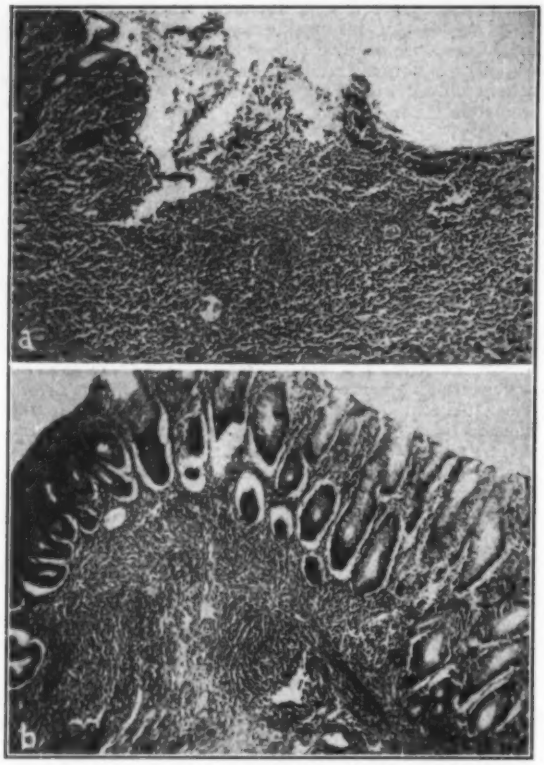

FIG. 5.—Pre-operative (*a*) and post-operative (*b*) rectal biopsies.

which were not responding to medical treatment the colon containing the vast bulk of the disease was to be excised, then the cause of the gross toxaemia would be removed and with the consequent return of the patient to good health the inflammatory changes in the residual rectum might well resolve.

If the toxaemia was to be overcome it seemed essential that the whole of the colon, including the pelvic colon, should be excised, as clinical and pathological examination of many specimens of the disease had shown that the distal regions were often the most heavily affected. Should a lesser excision be undertaken it appeared likely that ill-health associated with the presence of a segment of the pelvic colon might well continue in a considerable proportion of the cases, so that resolution of the inflammation would not take place. The whole of the colon was therefore excised in the cases in this series and ileo-rectal anastomosis carried out, and we believe that the resolution of the inflammation in the remaining rectum that has taken place in all but three of the patients is dependent upon this total excision.

All patients have been repeatedly examined in the follow-up department and have been examined by a narrow-bore proctoscope. The mucosa appears to have regenerated in all except the three cases referred to. As a result of fibrosis the rectum will not distend as will a normal rectum, which is the reason for the use of a proctoscope with a smaller lumen. The mucosa, too, appears fixed to the underlying structures and has not the mobility of the normal rectal lining.

To record this resolution of the inflammatory change we have in many of the cases taken a rectal biopsy before and after operation, and the healing suggested by macroscopic examination has been confirmed to have taken place by the pathological examination of these specimens (Fig. 5).

It is therefore established that, following total colectomy and ileo-rectal anastomosis, resolution of the residual inflammation in the rectum can occur, but, as will be seen from the sections, the normal pattern of palisaded glandular formation is only partially regained.

Should the Disease Persist or Recur in the Remaining Rectum can the Latter be Removed and an Ileostomy Established Without Risk?

No case has been converted to a permanent ileostomy, as the indications for this have not arisen in the present series. It would seem, however, that the conversion would not present any great surgical problem.

Summary

A series of 47 cases of diffuse ulcerative colitis treated by total colectomy and ileo-rectal anastomosis is analysed.

It is concluded that the operation can be carried out with a low mortality rate and low post-operative morbidity, and that 70% of the patients return to a normal economic and social life and a further 15% have only minor limitations, the result of some frequency of bowel action.

It is suggested that the procedure described should be the primary method of choice in the surgery of diffuse ulcerative colitis.

[Since the completion of this article several months ago the residual rectal ulceration in the two cases treated by intracavitary ultra-violet light has resolved. These patients could now be included in the first category.]

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SIMPLIFIED RADIOACTIVE IODINE THERAPY

BY

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The treatment of thyrotoxicosis with radioactive iodine (^{131}I) is now an established procedure for the management of selected patients.

The long-term experience of one of the pioneer groups of American workers has been reported (Chapman and Maloof, 1955), and Myant (1956) has reviewed the results achieved throughout the world from 1942 to 1954. In this country the most extensive reported experience has been that of Blomfield, Jones, Macgregor, Miller, Wayne, and Weetch (1955), who reviewed results in the first 140 patients treated in Sheffield.

Varying techniques have been used to obtain consistent and satisfactory results. Some workers attempt to simulate partial thyroidectomy by achieving remission in as many patients as possible by a single treatment with the isotope (Blomfield, Jones, Macgregor, Miller, and Wayne, 1951; Freedberg, Kurland, Chamovitz, and Ureles, 1952; Fraser, Abbatt, and Stewart, 1954; Chapman and Maloof, 1955). Others give small and repeated doses of the isotope, preferring to treat the patient gradually and slowly, hoping thereby to minimize the likelihood of producing myxoedema (Williams, Towery, Jaffe, Rogers, and Tagnon, 1949).

Whatever technique is adopted, however, the prime consideration is that when the dose is prescribed for an individual patient the need for an early remission of symptoms is balanced against the likelihood of producing eventual myxoedema (Myant and Pochin, 1955).

Any technique which attempts to cure the patient quickly and effectively by a single treatment with ^{131}I involves the selection of a dose thought to be optimal in terms of ^{131}I concentration in the thyroid gland (Chapman and Maloof, 1955: Fraser *et al.*, 1954) or of radiation dosage in rads delivered to the thyroid (Blomfield *et al.*, 1951; Freedberg *et al.*, 1952). The calculations necessary to determine these doses are complicated (Myant and Pochin, 1955), and depend upon a number of assumptions that are not always valid.

This paper is a preliminary account of the experience of one observer who endeavoured to employ a precise and quantitative technique for a number of years (Blomfield *et al.*, 1955) and then, as a result of the experience gained, followed thereafter a different and, by previously accepted standards, completely heretical technique. The results are reported on the first 150 consecutive cases so treated after a minimum observation period of one year.

Principles Involved in Dosage Prediction

Any attempt to use a predetermined dosage of radiation in terms of rads or of ^{131}I concentration makes a number of assumptions the validity of which is doubtful.

(1) It is assumed that the dose of radiation is delivered uniformly throughout the gland. It has, however, been shown (Kelsey, Haines, and Keating, 1949) that there is an uneven distribution of ^{131}I in the thyroid gland. Oddie (1951) has moreover calculated that, even where a uniform concentration throughout the gland is assumed, there could theoretically be a hundredfold difference between the highest and lowest dosage received within any one gland. So, at best, any prediction of dose concentration is no more than an inaccurate mean value.

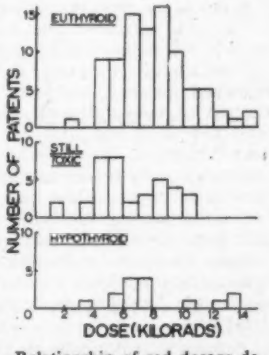
(2) The variable factors required to calculate the radiation dosage are the peak percentage uptake of the isotope by the gland, the effective half-life of the isotope in the gland, and the mass of the gland itself. For the calculated dosage to have any meaning these preliminary measurements must be exact, and although uptake and half-life can be defined accurately there is no sure method of assessing thyroid gland mass. Soley, Miller, and Foreman (1949) accepted that the mass, as judged by inspection and palpation, might be inaccurate by as much as 30 to 40%. Many attempts have been made to devise objective techniques, such as that of Blomfield *et al.* (1953), by which gland volume may be calculated. Measurements can be made in two planes with a collimated Geiger or scintillation counter, but even such techniques cannot be dissociated from a possible subjective bias by the observer. Kelly (1954) found that there might be very large errors inherent in similar and even more refined methods. Gland size is undoubtedly the most important factor in dose determination, and its accurate calculation is essential if doses are to be expressed either in rads or in microcuries per gramme of thyroid tissue. If a figure is applied to an estimate of gland mass it may acquire undue significance, and on subsequent review it is easy to forget the fictitious accuracy of the original estimate. The false precision of many of the calculations previously performed in relation to isotope therapy has often deluded the protagonists of such calculations that they have a value in excess of their real worth.

(3) Predetermined dosage techniques require that the metabolism of the ^{131}I be similar following both the tracer investigation and the therapeutic dose. Uptake measurements are usually in reasonable agreement, but Blomfield *et al.* (1951, 1953) and Freedberg *et al.* (1952) found occasional alterations in effective half-life. The biological elimination of the isotope from the gland was often shorter after treatment, presumably owing to an early release of hormone as a result of radiation damage. Table I demonstrates the sort of variation in dosage that may ensue, and the calculated radiation dose delivered is thus significantly different from that originally planned. In this series of 10 cases, originally discussed by Blomfield *et al.* (1953), the actual dose delivered in Cases 2, 5, and 9 is appreciably different from that envisaged. The same gland size was used in the estimation of both doses, and the variations in these cases were chiefly due to differing effective half-lives. Miller and Sheline (1951) also found a very wide range of values for the actual dose delivered to the patient. When they "pre-selected" a dose of 6,000 reps (roentgen-equivalent physical) the doses actually delivered varied from 2,000 to 20,000 reps.

TABLE I.—*Comparison of Predicted and Measured Radiation Doses (rep)*

Case No.	Predicted from Tracer Measurements	Measured after Therapy
1	8,000	8,600
2	10,800	13,500
3	7,900	7,500
4	8,700	8,300
5	9,000	5,600
6	8,000	7,300
7	11,000	11,800
8	6,200	6,200
9	8,500	11,300
10	8,000	7,300

(4) The use of a predetermined dose schedule assumes that the biological response to a given dose of radiation or concentration of ^{131}I is constant and predictable. This is certainly not the case. The radiosensitivity of different glands is a biological variable. This results in some patients being inadequately treated with a dose which has delivered perhaps three times as much radiation as that which has rendered another patient myxoedematous. The accompanying Figure (from Blomfield *et al.*, 1955) illustrates the relationship between the clinical result and the calculated rad dosage, although some of this apparent variability may be due to errors in estimation of gland size. It can be seen that some patients remained toxic after doses of more than 10,000 rads, whereas others were made myxoedematous with less than 4,000 rads. A similar lack of correlation between clinical result and the actual dosage of radiation delivered was shown by Miller and Sheline (1951). Myant (1956) has fully discussed the factors which may be partly responsible for these results, but, making all possible allowances, it is apparent that such a degree of biological variability renders dose prediction impracticable.



Relationship of rad dosage delivered to the thyroid gland to the clinical result, after the first treatment with radioactive iodine (from Blomfield *et al.*, 1955).

Alternative Therapeutic Techniques

It is apparent that precise calculation of ^{131}I concentration in the gland demands an accurate knowledge of gland mass, and this is not easy to ascertain. The technique involving dosage fractionation by means of the repeated administration of small doses of ^{131}I involves numerous measurements of thyroid function. These may be of prognostic value (Myant, 1953), but the inevitable time-lag before treatment is complete makes the method unsatisfactory and inconvenient for patient and physician.

Alternatively, the disease can be treated more simply by adjusting the dose in millicuries to that most likely to effect a rapid clinical cure while avoiding as far as possible the development of myxoedema. An attempt has therefore been made to treat patients on these lines, without considering the details of uptake measurements and without attempting to assign a figure in grammes to the size of any given thyroid gland.

Method Used

Patients judged suitable for ^{131}I therapy by criteria defined previously (Blomfield *et al.*, 1955) were given a preliminary tracer dose of ^{131}I. This confirmed the diagnosis and ensured that the thyroid gland was able to absorb a high proportion of the administered dose. The criteria of toxicity were those of Goodwin, Macgregor, Miller, Wayne (1951) and Fraser, Hobson, Arnott, and Emery (1953).

Patients who lived within a reasonable distance from hospital were treated as out-patients, and comparatively few required to be admitted. ^{131}I was then given, the size of the dose being judged on the simple principle of a small dose for a patient with a small gland and a large dose for a patient with a large gland. Past experience had shown that myxoedema was seldom produced by doses as low as 5 millicuries even where gland enlargement was minimal. Chapman and Maloof (1955) have since shown that among 520 patients the smallest single dose to produce myxoedema was 6 millicuries. Our practice was to give 4 millicuries to patients in whom the thyroid was impalpable, 5 or 6 millicuries for minimally enlarged glands, and increasing doses up to the highest single dose of 15 millicuries, which was given to a patient with a large nodular gland. Other factors besides that of gland mass also influenced the size of dose prescribed: for example, larger doses were given to patients with significant cardiac failure, if the gland was nodular, or if the need to obtain a rapid remission of symptoms was greater than the risk of the production of hypothyroidism.

A few of the most thyrotoxic patients received a course of carbimazole before ^{131}I, but normally no preliminary treatment of this nature was prescribed. In such cases, however, the principles governing the prescription of the dose remained unaltered, and the ^{131}I was given after the administration of the antithyroid drug had been stopped for at least four days and after the tracer-dose investigation had been completed. If it was thought advisable to diminish the patient's toxicity before the effect of the ^{131}I therapy had had time to develop, a course of potassium iodide, 60 mg. daily, was given, starting not earlier than one week after the ^{131}I had been given, and continuing for not longer than three weeks. On general principles it was felt undesirable to give antithyroid drugs after ^{131}I therapy, but this was in fact done on a few occasions as a preliminary to further isotope treatment.

Patients were normally seen six weeks after treatment, and thereafter at successively longer intervals. If, however, there was no clinical improvement after six to ten weeks, it was our custom to arrange for a further tracer-dose investigation and for the administration of additional ^{131}I. The same principles governed the size of dose prescribed. Many patients who have been inadequately treated experience appreciable shrinkage of the thyroid gland, and this may determine that a smaller dose should be used on a subsequent occasion.

Results

We are here concerned only in reporting these initial results so that this technique may be compared with the more elaborate methods previously employed. It is not intended to detail the sequence of recovery and complications which ensues after ^{131}I therapy, as this has been fully discussed elsewhere (Blomfield *et al.*, 1955; Myant, 1956).

Between January 1, 1953, and October 31, 1956, 267 patients were treated by this technique. Table II summarizes the results in the first 150 consecutive patients followed for a minimum period of one year after they were first treated.

TABLE II.—*Clinical Results of Radioactive Iodine Therapy (Minimum Follow-up, One Year)*

	Result of First Treatment				Clinical State after 12–46 Months	
	Patients		Dose (mc.)		Patients	
	No.	%	Mean	Range	No.	%
Present Series (150 *Patients*)						
Euthyroid ..	89	59	8·0	4–15	130 (3 dead)	87
Still toxic ..	48	32	8·4	6–12	3 (2 dead)	2
Hypothyroid ..	13	9	7·9	4–10	17 (1 dead)	11
Blomfield et al. (1955) (140 *Patients*)						
Euthyroid ..	—	62	9·6	2·4–22·4	—	84
Still toxic ..	—	27	12·2	4·0–31·6	—	4
Hypothyroid ..	—	11	9·2	5·2–15·9	—	12

At the time of follow up 87% of the patients had been rendered euthyroid; 11% had become hypothyroid and were receiving thyroxine maintenance treatment; and 2% (3 patients) had either died while still thyrotoxic or required further treatment. Fifty-nine per cent. of the patients were rendered euthyroid, and 9% became myxoedematous after their first dose of the isotope.

Of the 48 patients (32%) who required more than one treatment, 41 later became euthyroid; of these, 28 required two, 11 required three, and 2 required four therapeutic doses. Four of these 48 patients became myxoedematous after their second treatment. Of these four, two were made hypothyroid intentionally because of associated intractable cardiac failure.

Two patients died within a year of receiving ^{131}I. One died as a result of long-standing portal hypertension, but, although improved, she was still thyrotoxic at the time of death despite having been treated on three occasions. The other was a woman aged 70 who died a few days after her second treatment. She fell heavily while in hospital and fractured the neck of her femur; fatal hypostatic pneumonia ensued. A third patient was still toxic after one year, but became euthyroid following further treatment.

Apart from the two patients who died while still thyrotoxic, four others had succumbed by the time the review was made (November 1, 1956). Three were elderly men who had been rendered euthyroid and who later had myocardial infarctions. The fourth was a patient with advanced diabetic nephropathy who died in uraemia two and a half years after severe hyperthyroidism had been adequately controlled.

Table II also includes for comparison the corresponding percentage figures for the 140 patients reported by Blomfield *et al.* (1955), who had been treated by a method of dose selection involving an elaborate and quantitative technique. It can be seen that the results in Edinburgh were essentially similar and the differences between the two groups are insignificant. The range of doses in millicuries employed in both centres is roughly comparable, but the mean figures are slightly lower in Edinburgh.

Discussion

The results achieved with this simple clinical technique are in no way different from those previously obtained when the prescription of the dose was governed by more meticulous and elaborate methods. Furthermore, they are essentially the same as have been reported by other centres. The four patients who became myxoedematous after a second therapeutic dose were all among the first 60 who received treatment. The production of hypothyroidism in this way can usually be avoided if sufficient patience is exercised and the physician is prepared to wait for the late remission that sometimes occurs. Nevertheless, our experience coincides with that of Myant (1956), who found that if no improvement has occurred after 10 weeks further therapy is almost invariably necessary.

If it is confirmed that similar or better results can be obtained by the use of this technique, ^{131}I therapy could be

greatly extended. The principles are essentially so simple that there is no reason why other physicians should not achieve the same results even if they have not previously had the advantage of experience with more meticulous methods. It is important that tracer-dose investigations should always precede ^{131}I therapy, because they confirm the diagnosis, and ensure that the uptake of ^{131}I by the thyroid gland is high. Failing such tests it is inevitable that mistakes in diagnosis and management will occur.

The majority of patients who receive ^{131}I therapy would in the absence of the isotope be treated by partial thyroidectomy. This operation, including the pre-operative preparation and recovery, usually involves at least three weeks in hospital, with all the expense to the National Health Service that such an admission entails. Thereafter a shorter or longer period of convalescence is necessary before the resumption of ordinary activities. When patients are treated with ^{131}I in hospital they need not remain for longer than three or four days unless their general condition warrants it. Treatment of out-patients, on the other hand, involves no expense except that of the isotope itself. This is trivial in comparison with the costs of the hospital admission. Including transport charges, an average dose of 8 millicuries costs less than £2. The economies effected by isotope therapy are therefore considerable.

The elaborate methods previously used in an attempt to determine precisely the dose to be prescribed are expensive. The detailed measurements necessary, particularly when gland size is estimated by scanning techniques, involve physicists and technicians in an expenditure of time and effort probably unjustified by any advantage which accrues.

From the long-term point of view it is important that some centres with adequate facilities, and a sufficient staff of physicists and technicians, should continue to make quantitative observations upon the amount of radiation delivered in isotope therapy. Only then can further knowledge be obtained about the factors responsible for the variation in response. Effective and safe treatment, however, can be carried out at any centre with a minimum of equipment and technical personnel. The cases here reported have been treated by one physician with the assistance of a single technician. It therefore should not be thought that the application of radioactive iodine in the treatment of thyrotoxicosis is necessarily a complex procedure.

Summary

A series of 150 consecutive cases of thyrotoxicosis have been treated with radioactive iodine. A simple clinical dosage technique has been used, based primarily upon an approximate estimate, by inspection and palpation, of thyroid gland mass, although certain other clinical factors were also taken into consideration.

On review after a minimum period of one year, 87% of patients had become euthyroid, 11% were myxoedematous, and 2% had been inadequately treated. Fifty-nine per cent. of the patients were satisfactorily treated with a single dose of the isotope.

The results achieved did not differ appreciably from those previously reported in which a method had been employed for dose selection involving an elaborate and quantitative technique.

The prescription of an entirely accurate radiation dose is impracticable, chiefly because of the errors inherent in the techniques for the estimation of gland mass, and because of the biological variability in the radiosensitivity of different glands. Elaborate techniques are unnecessary for the safe and effective treatment of thyrotoxic patients.

I am grateful to Professor D. M. Dunlop for his interest in this work, and to Professor R. McWhirter for his co-operation. I am indebted to the Secretary of State for Scotland, through the Advisory Committee on Medical Research, for a grant towards expenses.

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DANGEROUS BLEEDING ASSOCIATED WITH CARCINOMA OF PROSTATE

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Excessive bleeding sometimes develops in patients with metastatic carcinoma of the prostate. The bleeding may occur either spontaneously or in association with surgical procedures, especially those directly involving the malignant prostate. Bleeding of varying degree may arise from any site, particularly the urinary tract and the nose, and in the skin as ecchymoses. If surgery is performed dangerous bleeding may take place into the traumatized area. Scott (1956) reports the loss of 1.5 litres of blood into the scrotum following orchidectomy in such a case. The haemorrhage may be severe enough to cause death if properly directed treatment is not given.

The relationship between bleeding and carcinoma of the prostate has not been fully explained. Recent studies of abnormal clotting have shown, however, that in certain cases of metastatic carcinoma of the prostate the phenomenon of fibrinolysis develops and that this is associated at times with a drop in the level of plasma fibrinogen (Tagnon *et al.*, 1953a, 1953b). Such fibrinolysis is thought to be due to proteolytic enzymes which dissolve away blood clot by digesting fibrin (fibrinolysis), in some cases also lysing fibrinogen (fibrinogenolysis) and other clotting factors such as prothrombin and factor V. Tagnon *et al.* (1953b) have demonstrated an abnormal fibrinolysin in the blood of 12% of their patients with metastatic carcinoma of the prostate, and

they have shown that this proteolytic enzyme is produced by the carcinomatous tissue itself.

In the following two cases of metastatic carcinoma of the prostate profuse bleeding occurred, sufficient to endanger life.

Case 1

First Admission

A 60-year-old man was admitted to hospital on December 27, 1953, with acute urinary retention and one month's history of urinary frequency, urgency, dribbling, and haematuria. Examination revealed a bladder distended to the umbilicus and enlarged nodes in the left groin. The left lobe of the prostate was enlarged, hard, and irregular, and a clinical diagnosis of carcinoma of the prostate was made. The patient was catheterized and 2 pints (1,140 ml.) of clear urine was obtained. A few hours after this procedure he started to bleed from the nose, rectum, and bladder. The bleeding was of moderate degree and did not require blood transfusion, but it lasted for four days.

Investigations.—Hb, 86% (12.7 g. per 100 ml.); W.B.C., 8,800 per c.mm.; platelets (Lempert), 77,000 per c.mm.; blood urea, 46 mg. per 100 ml.; serum acid phosphatase, 35 Gutman units; serum alkaline phosphatase, 29 K.A. units; plasma albumin, 3.1 g. per 100 ml., globulin, 2.9 g. per 100 ml., fibrinogen "practically zero." The patient's recalcified plasma formed a tiny pellicle of fibrin which disappeared during overnight incubation at 37° C. This test was not carried out aseptically, but even without proof of sterility the evidence was very suggestive of abnormal fibrinolysis.

On December 31, while he was still bleeding, he began treatment with stilboestrol, 10 mg. t.d.s., and this dose was increased to 15 mg. t.d.s. five days later. This therapy coincided with, or was responsible for, the cessation of all bleeding. Moreover, his platelet count, which had remained between 50,000 and 70,000 per c.mm. while he was bleeding, rose steadily to 230,000 per c.mm. over the succeeding five days and remained at that level. Subsequently his urological symptoms improved so much that there was no further need to consider transurethral prostatectomy.

Second Admission

Seven months later, while still receiving stilboestrol, 15 mg. t.d.s., the patient was admitted again with acute urinary retention. On this occasion he looked pale, and his chest, abdomen, and right wrist were covered with petechiae. Urine obtained by catheter was clear.

Investigations.—Hb, 60% (8.9 g. per 100 ml.); W.B.C., 7,900 per c.mm.; platelets, 86,000 per c.mm.; blood urea, 52 mg. per 100 ml.; serum acid phosphatase, 68 Gutman units; serum alkaline phosphatase, 33 K.A. units. Radiographs of the pelvis revealed secondary deposits in the bones, but the chest films showed no abnormality.

On the day after his readmission the patient suddenly collapsed, complaining of pain in the right shoulder and scapular region. He began to bleed round his indwelling catheter, and blood began to ooze from a venepuncture wound of the previous day. His nose started to bleed, and further showers of petechiae appeared on his arms and trunk. He became very shocked, and his clinical condition was not improved by the transfusion of three bottles of stored and one of fresh blood. Eight hours after the onset of bleeding he died from shock due to exsanguination from massive bowel haemorrhage.

A post-mortem examination confirmed the presence of a poorly differentiated adenocarcinoma of the prostate penetrating the capsule. There were metastases in the lungs, ribs, vertebrae, and pelvis. Petechiae were seen on the serosal surface of the gall-bladder, on the submucosal surface of the renal pelvis, and in the mucosa of the bladder as well as the skin, and there were haemorrhages into the wall of the pharynx, liver, and bowel. No local lesion was found to account for the large amount of blood in the alimentary tract.

Comment

At this time (1954) the condition of hypofibrinogenaemia associated with fibrinolysis in cases of carcinoma of the prostate was not recognized by us. It is possible, however, that fibrinogen depletion and fibrinolysis caused the haemorrhagic tendency which ultimately proved fatal to the patient even though this diagnosis is substantiated by relatively few haematological investigations.

Case 2

On February 13, 1956, a man aged 71 presented with haematuria which had developed over the previous week. He gave a history of six months of unremitting backache and of scalding and frequency of micturition. The liver was palpable 1½ in. (3.8 cm.) below the costal margin. He had a large fixed prostate gland which was thought to be probably malignant. By the time of his admission to hospital on March 6 the haematuria had stopped spontaneously.

Investigations

Hb, 97% (14.4 g. per 100 ml.); total serum acid phosphatase, 220 Gutman units; serum alkaline phosphatase, 30 K.A. units; serum bilirubin 1.1 mg. per 100 ml.; thymol turbidity, 1 unit; total serum proteins, 6.5 g. per 100 ml. Radiographs of the pelvis did not show any evidence of bony metastases, but an intravenous pyelogram revealed a moderately severe left hydronephrosis and a lobulated filling defect on the bladder base.

As an initial therapeutic procedure bilateral orchidectomy was performed, and a perineal biopsy of the prostate was also taken. This ultimately confirmed the presence of an anaplastic carcinoma of the prostate. After the biopsy had been taken all the traumatized tissue began to bleed freely, and the patient developed peripheral circulatory failure. Post-operatively the perineal wound continued to bleed, and his condition deteriorated. No improvement was observed as a result of the emergency transfusion of three bottles of stored blood over four hours; indeed, he began to develop spontaneous subcutaneous bruising around the shoulder-girdle and arms. At this stage it was reported that the original specimen of venous blood removed for the emergency cross-matching had still failed to clot. The syndrome was fully investigated by the following laboratory tests.

1. *Failure of Blood to Clot.*—The specimen of blood removed immediately after the operation had not been in contact with an anticoagulant, and yet it appeared to remain completely fluid apart from a very minute clot which comprised little more than a few fibrin strands lying loose within the specimen. This tiny clot did not increase in size thereafter. Indeed, it became less visible during the succeeding five hours.

This single observation, which was made in the blood bank, was enough to suggest the diagnosis of fibrinogen depletion in such a patient. The following emergency test confirmed the presumptive diagnosis.

2. *Thrombin Plus Whole Blood.*—Since thrombin acts directly on fibrinogen and by-passes all the earlier clotting factors, it is, in the absence of inhibitors, a specific indicator of the presence of fibrinogen. 0.2 ml. of commercial thrombin (Maw, 50 N.I.H. units per ml. of normal saline) was added to the same volume of oxalated whole blood (Scott, 1955). When assessed some 60 seconds later a very poor clot had formed. It was small in size, occupied a mere fraction of the total volume, and was ineffective in enmeshing red cells. By contrast, normal blood produced a large firm clot occupying the whole volume and enmeshing almost all the red cells.

When the original specimen which had been sent for cross-matching without an anticoagulant was then used in place of the oxalated specimen, and thrombin was added, no clot at all was formed. This showed the complete absence of fibrinogen. One presumes that such fibrinogen as had been present originally had all gone to form the few strands of fibrin described above.

This simple thrombin test demonstrated hypofibrinogenaemia, and this was enough to be the basis of specific emergency therapy. It did not supply information about the presence or absence of fibrinolysis such as affects formed clots. Perhaps the simplest demonstration of abnormal fibrinolysis occurs when sterile clotted blood liquefies spontaneously within 24 hours, but in this case lack of fibrinogen precluded the test in that form.

Treatment of the Bleeding.—Dried fibrinogen kept in readiness by the Sheffield Regional Blood Transfusion Service for such an occasion as this was used. This had been fractionated from pooled human plasma. About 4 g. was dissolved in 200 ml. of pyrogen-free distilled water and given to the patient intravenously over 20 minutes. At that time he was dangerously shocked, with blood running freely from the wound, and had a weak pulse of 130 a minute. All serious bleeding ceased within half an hour, and within one hour of the fibrinogen transfusion all oozing had stopped, with dramatic clinical improvement. No further fibrinogen therapy ever became necessary. The wound subsequently healed well.

Subsequent Investigations

The time interval between operation and removal of blood for the test described is given in parentheses.

1. *Platelet count* (Lempert) (12 hours), 150,000 per c.mm.

2. *Whole-blood Clotting-time* (Lee and White).—(12 hours):—A clot formed at about 20 minutes. This was still not a whole-volume clot, and it shrank considerably, until two hours later it was scarcely apparent amongst the red cells.

3. *Thrombin Plus Whole Blood.*—(12 hours):—Repetition of this test for the presence of fibrinogen (see above) showed a moderate-sized but nevertheless incomplete clot when examined at 60 seconds. The clot was much larger than it had been the previous night. (60 hours):—Identical with the control.

4. *Serial Plasma Dilution with Added Thrombin* (0, 12, 60 hours).—This is a simple emergency method for fibrinogen assay as advocated by Wolf (1954). The principle of the test is evident from the Table.

Serial Plasma Dilutions

Dilution in Saline:	1:10	1:20	1:40	1:80	1:160	1:320
Patient's plasma:						
Before fibrinogen therapy (0 hrs.)	+	+	−	−	−	−
After fibrinogen therapy (12 hrs.)	+	+	+	+	−	−
After fibrinogen therapy (60 hrs.)	++	++	+	+	+	+
Normal plasma as control (0, 12, and 60 hrs.)	++	++	+	+	+	+

++=large clot, +=small or very small clot. Formed by the addition of thrombin to all tubes.

It will be appreciated that the clot formed by the addition of thrombin to a dilution of normal plasma of 1:320 is very minute and, to be seen, requires close scrutiny in a good light. From the Table the fibrinogen level in the patient's plasma can be calculated on the basis of a dilution factor of ×2 between each tube. Thus, if one assumes the control fibrinogen level to be 200–400 mg. per 100 ml., then the pre-fibrinogen therapy specimen of the patient would be 12.5–25 mg. per 100 ml. and the post-therapy specimen would be 50–80 mg. per 100 ml. An estimate of fibrinogen by the Kjeldahl method later showed this second specimen to have in fact a fibrinogen content of 80 mg. per 100 ml. It thus confirmed the approximate range as given by this emergency method. The latter, however, took only 20–30 minutes to perform and read, as compared with hours by the Kjeldahl method.

5. *Estimation of Plasma Fibrinogen by Kjeldahl Method.*—At 12 hours, 80 mg. per 100 ml.; at 60 hours, 390 mg. per 100 ml.

6. *Quantitative Test for Fibrinolysis* (Biggs and Macfarlane, 1953a).—(12 hours):—Serial estimations showed no evidence of commencing fibrinolysis up to four hours. The blood was not kept chilled before the test. (60 hours):—A minimal increase of lysis was found after 19 hours when compared with the control, but the difference was not regarded as significant.

7. *Examination for Lysis of Normal Clot by Patient's Plasma.*—(12 hours):—No lysis was visible to the naked eye following the immersion of a washed fibrin clot (formed by the addition of thrombin to normal plasma) into undiluted patient's plasma, followed by incubation at 37° C. for 24 hours.

8. *Quick's One-stage "Prothrombin" Time.*—(12 hours):—Control 15", patient 25", prothrombin index 60%, prothrombin arbitrary efficiency 18%. A prolongation of the "prothrombin" time may be expected in the presence of a low fibrinogen level, but this does not exclude the possibility of other defects (see below).

9. *Two-stage Prothrombin Time* (Biggs and Douglas, 1953a).—(36 hours):—True prothrombin was 77% of normal. This level is within our normal range allowed by the method.

10. *Qualitative Test for Deficiency of Factor V or of Factor VII* (Biggs and Macfarlane, 1953b).—(12 hours):—No deficiency of factor V or of factor VII.

11. *Thromboplastin Generation Test* (Biggs and Douglas, (1953b).—(36 hours):—No abnormality demonstrated by this test in the patient's plasma, serum, or platelets.

Discussion

In Case 2 it was demonstrated that a dangerous fall occurred in the plasma fibrinogen level during a minor operative procedure on a malignant prostate gland followed by bilateral orchidectomy. Furthermore, the plasma fibrinogen rose to an adequate haemostatic level after a single intravenous infusion of 4 g. of human fibrinogen. The plasma fibrinogen was only 80 mg. per 100 ml., however, some hours after all bleeding had ceased, and this level is lower than that which is commonly believed to be haemostatic. The plasma fibrinogen then continued to increase, apparently spontaneously, until it reached normality on the third day. This recovery may have been assisted by the orchidectomy. The bleeding in Case 1 appeared to develop in the absence of any surgical trauma to the prostate gland, unless catheterization can be described as such.

Fibrinolytic activity was probably present in Case 1, as shown by the complete lysis of the clot left overnight. In Case 2 it is unfortunate that the first specimen examined specifically for fibrinolysis was taken from the patient 12 hours after bleeding had stopped as the result of treatment. By then there was no satisfactory evidence of fibrinolysis by the method used. Possibly a modification of the cold method advocated by Fearnley and Lackner (1955) might have given more information. Hypofibrinogenaemia therefore remains the unequivocal feature of these two patients. Fibrinolysis remains a probability in Case 1 but an unproved factor in Case 2.

Tagnon *et al.* (1953b) have shown in cases of metastatic carcinoma of the prostate with fibrinolysis that, while the platelet count is often depressed, it may remain normal despite the fibrinolysis. In Case 1 the platelet count was abnormally low at the time of the bleeding and recovered subsequently during oestrogen therapy. The exact significance of this is not clear.

An unusual feature present in Case 2 was the apparently isolated fall in plasma fibrinogen. There was no obvious fibrinolytic activity to which proteolytic digestion of fibrinogen could be attributed. Nor do we know of any evidence to suggest that the mechanism is the same as that found in premature separation of the placenta (Stevenson *et al.*, 1953) and perhaps in certain lung operations (Chalnot *et al.*, 1952), where it seems that intravascular clotting may take place with consequent depletion of fibrinogen, as a result of the release into the circulation of excessive thromboplastin from the organ involved. The fibrinolytic factor, when it is present, is more easily understood, since tissue juices from a prostatic carcinoma have been shown *in vitro* to cause clot lysis and also to digest fibrinogen, factor V (ac-globulin), and probably prothrombin (Tagnon *et al.*, 1953a, 1953b).

Therapy is directed to controlling fibrinolysis and correcting hypofibrinogenaemia. In practice these two may perforce have to be treated together. Oestrogen therapy has an important place in controlling the lytic factor when present

(Tagnon *et al.*, 1953a) and this is substantiated by Case 1. The position in Case 2 is less certain. Also it seems that removal of the source of testosterone by orchidectomy has an experimental justification over and above the mere need to make the female hormone preponderant over the male hormone, since it was shown by Tagnon *et al.* (1953a) that the addition of testosterone to a maintenance dose of oestrogen made the latter ineffective in their patient. Corticotrophin has also been claimed to diminish the lysis, thereby helping to control the bleeding manifestations in these patients, and Stefanini *et al.* (1953) claimed that response to this treatment was more rapid than with oestrogens. Therapy of the hypofibrinogenaemia is extremely important, and must be as specific as possible. It will be appreciated that whole blood is relatively useless for this purpose, since it supplies so little fibrinogen in each bottle. Fractionated fibrinogen or triple-strength reconstituted dried plasma is the only type of emergency therapy. If whole blood must be given to replace blood loss, fibrinogen infusion should be given first, or at least simultaneously. About 4 g. of fibrinogen should be given intravenously in the first place, and subsequent additions to this should depend on the patient's recovery and on laboratory findings. As Case 2 has shown, one injection alone may be sufficient.

In conclusion, therefore, we suggest that the association of abnormal bleeding and carcinoma of the prostate is not infrequent, and, when suspected, should be confirmed by the more simple tests described in Case 2. The control of hypofibrinogenaemic bleeding depends on its recognition and the immediate availability of human fibrinogen.

Summary

Two cases are described in which the patients suffered from metastatic carcinoma of the prostate and developed a generalized haemorrhagic state. During these episodes the blood of both patients was incoagulable owing to a deficiency of plasma fibrinogen. In the first patient, who died as a result of the bleeding, this loss was probably associated with a fibrinolytic mechanism. The second patient recovered dramatically on receiving 4 g. of human fibrinogen intravenously.

Simple methods are described for the emergency laboratory diagnosis of hypofibrinogenaemia, using commercial bovine thrombin.

Whole blood is almost valueless as a specific therapy for hypofibrinogenaemia, and should be used only for its bulk, its cellular constituents, and its other clotting factors. Hypofibrinogenaemia should be treated by fractionated fibrinogen intravenously or by triple-strength reconstituted dried plasma.

The treatment of fibrinolysis is discussed.

We thank Professor R. P. Jepson for permission to describe these patients, who were under his care; Dr. H. Lempert, of the Royal Infirmary, Manchester, for allowing us to use the results of his haematological investigations in the first patient; and Dr. E. K. Blackburn for his help. We are indebted to Miss Pauline Hall for technical assistance, and to the Endowment Fund of the Board of Governors of the United Sheffield Hospitals for a grant towards the cost of laboratory expenses.

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PROPHYLACTIC VALUE OF TETANUS ANTITOXIN IN MICE PREVIOUSLY INJECTED WITH HORSE SERUM

BY

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Littlewood, Mant, and Payling Wright (1954) reported a case in which a patient died of tetanus despite the fact that he was given the generally accepted prophylactic dose of tetanus antitoxin (1,500 units) shortly after injury. The patient was shown to be allergic to tetanus antitoxin (via a positive skin test), and his case history revealed that he had been given a prophylactic dose of tetanus antitoxin after an injury six months previously. Littlewood *et al.* suggested that the therapeutic ineffectiveness of the tetanus antitoxin was due to the state of hypersensitivity to the antitoxin which resulted in its accelerated removal from the circulation. They cited data from investigations of Glenny and Hopkins (1924), Talmage *et al.* (1951), and others which clearly indicate that previous experience with an antigen results in an accelerated removal of that antigen from the circulation upon its subsequent injection. The following experiment tests the hypothesis of Littlewood *et al.* by noting the duration of the prophylactic effectiveness of tetanus antitoxin in normal mice and in mice previously injected with horse serum.

Methods

Female 22–30 g. Carworth Farms CF strain of mice were divided into three groups. Group I was injected intraperitoneally with 0.1 ml. of *Haemophilus pertussis* vaccine† and 0.5 ml. of undiluted horse serum. Groups II and III received only 0.1 ml. of pertussis vaccine. Normal horse serum rather than horse-serum antitoxin was used to sensitize mice to a subsequent injection of antitoxin, since preliminary experiments indicated the superiority of normal horse serum as a sensitizing antigen. This result was not surprising in view of the fact that the antitoxin employed (Lederle) was of the type that is treated with proteolytic enzymes to modify its allergenic properties. Pertussis vaccine was administered along with the horse serum since it has been shown by Malkiel and Hargis (1952), Kind (1953), and Munoz *et al.* (1954) that this vaccine increases the sensitivity of mice to anaphylactic shock. Eleven days later the mice in groups I and II were inoculated intraperitoneally with 0.2 ml. (300 units) of tetanus antitoxin.

Of 62 mice sensitized with horse serum and injected with the antitoxin, 2 died and 4 others showed symptoms of severe anaphylaxis but recovered. On the third, seventh, fifteenth, nineteenth, and twenty-fourth day after receiving antitoxin, 12 mice from group I and 12 mice from group II were challenged intraperitoneally with approximately 1 M.L.D. of tetanus toxin. On each of these days 12 mice from group III (previously injected with only pertussis vaccine) were similarly challenged with tetanus toxin. The tetanus toxin employed in this experiment was obtained from Lederle Laboratories (lot No. 1872M). The fluid toxin had been stored at refrigerator temperatures for two years, but possessed considerable potency; 0.1 ml. of a 1:200 dilution injected intraperitoneally was approximately 1 M.L.D. Toxin dilution was made in nutrient broth, and deaths were noted for four days after injection.

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†48.8 billion organisms per ml.

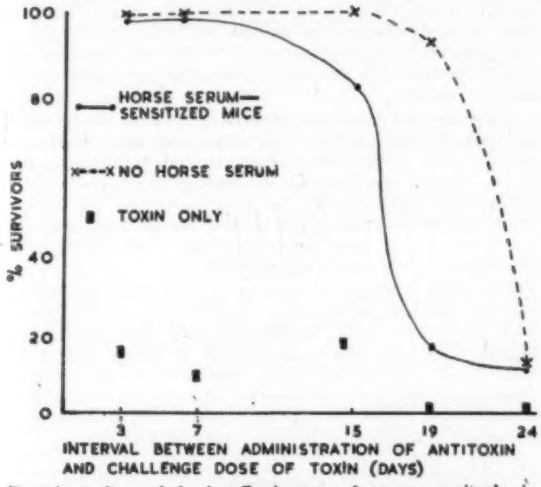
Results

The data in the Table and the Chart indicate that up to the fifteenth day after the administration of tetanus antitoxin all mice possessed sufficient antitoxin to neutralize the challenge dose of toxin. Of the mice challenged on the fifteenth day, two deaths occurred among the animals of group I which had been inoculated with horse serum 11 days prior to antitoxin. No deaths occurred among the animals which had no previous experience with horse serum (group II). Of the mice challenged on the nineteenth day after the administration of antitoxin, only 4 of 13 (30%) of the animals inoculated with horse serum survived the challenge dose of tetanus toxin, as compared with 11 of 12 (91%) of the mice which had not previously received horse serum. The difference between the percentage of survivors in the two groups is a significant one ($P < 0.01$). In a second experiment conducted in a similar manner, comparable results were obtained. Of 23 mice inoculated with horse serum and challenged with tetanus toxin on the seventeenth day after the administration of tetanus antitoxin, only 7 survived. In contrast, of 24 mice with no previous experience with horse serum, 22 survived challenge doses of toxin administered on the seventeenth day after injections of antitoxin. The difference between the percentage of survivors in the two groups is a significant one ($P < 0.01$).

Effect of Previous Administration of Horse Serum on Duration of Protective Ability of Tetanus Antitoxin

Group	On Day 0	On Day 11	No. of Mice Surviving Challenge (Survivors/Total) with Approximately 1 M.L.D. of Tetanus Toxin				
			Days After Administration of Antitoxin*				
			3	7	15	19	24
I	0·1 ml. pertussis vaccine + 0·05 ml. horse serum	0·2 ml. tetanus antitoxin (300 units)†	12/12	12/12	9/11	4/13‡	2/12
II	0·1 ml. pertussis vaccine	,,	12/12	12/12	12/12	11/12‡	2/12
III	,, ,,	—	2/12	1/12	2/11	0/12	0/12

* Note that the mice in group III received no antitoxin; they served as controls for the potency of the toxin.
† Two mice died of anaphylactic shock; 4 showed symptoms of severe anaphylaxis and recovered.
‡ The difference in the percentage of survivors in these two groups is statistically significant ($P < 0.01$).



Duration of prophylactic effectiveness of tetanus antitoxin in mice inoculated with horse serum and in mice not so inoculated.

Discussion

The data presented here support the contention of Littlewood *et al.* that previous experience with horse serum may result in failure of antitoxin to protect. However, we agree with Beeson (1955–6) that an alternative explanation of the fatal case of tetanus cited by the aforementioned authors may be that the conventional prophylactic dose of tetanus antitoxin (1,500 units) was insufficient to neutralize the toxin present. Beeson cites other cases of prophylactic failure of 1,500 units of tetanus antitoxin and suggests that 10,000 units should be used for adequate passive immunization.

An increase in the prophylactic doses of tetanus antitoxin from 1,500 to 10,000 units would thus seem to be advantageous for two reasons. Ten thousand units would offer better protection in cases in which unusually large amounts of toxin were being produced. Ten thousand units of tetanus antitoxin might also be more effective in cases in which the antitoxin was being rapidily eliminated because of the patient's previous experience with horse serum.

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A SIMPLE QUICK TEST FOR GLUCOSE IN URINE

REPORT ON USE OF CLINISTIX

BY

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Two extremely simple enzyme tests have been developed which are highly specific for glucose in urine. These are "tes-tape" and "clinistix," but the present paper is concerned only with the latter. The method consists in dipping a specially treated thick paper stick approximately the size of a book-match, the last half-inch of which is impregnated with reagents containing an enzyme system, into a specimen of urine. The stick turns blue in the presence of glucose, and the blue colour should have developed in one minute. If the stick remains colourless there is no significant glucose in the specimen.

Application of the Test

This paper reports on a field trial in which clinistix was used for detecting glucose in urine and the effectiveness of the test compared with "clinitest" reagent tablets as standard. The trial was limited to patients over the age of 11 years attending the Birmingham Chest Clinic for the first time. Nursing staff were responsible for obtaining a specimen of urine from all new patients in the specified group. This was normally done in the interval between the taking of the chest radiograph and the clinical examination, so that the tests were completed before the patient was seen by the physician. Nurses performed the actual tests after being trained in the technique, and recorded the results. The technique is simple, no special apparatus or boiling is required, and specificity is beyond doubt. Hunt, Gray, and Thorogood (1956) have already stressed that the test is essentially an ultra-micro-method in the strictest sense and requires all the standards of chemical cleanliness such methods demand.

In the small number of patients whose specimens gave a positive result, blood-sugar estimations were carried

out in the pathological laboratory within 10 minutes of the positive finding. The details of the further management of patients with positive findings in the urine depended on whether any pulmonary abnormality was present in addition or not. All cases of glycosuria, however, were fully investigated either as out-patients, if their lungs were normal, or as in-patients if pulmonary disease was present.

Results

During a period of five months, from June 1, 1956, to October 31, 1956, 942 patients (593 males and 349 females) attended for examination. Positive findings on clinitest or clinistix, or both, were found in only 26 (2.76%). These are set out in Table I. Of the 26 with positive findings on urine examination, 20 were males and 6 were females, and these are discussed below.

TABLE I.—*Results of Tests in 26 Cases with Positive Findings*

Case No.	Age	Sex	Urine Test		Blood Sugar mg./100 ml.	Remarks
			Clinitest	Clinistix		
1	41	M	Positive	Positive	280	Diabetic
2	62	M	,,	Negative	100	Non-diabetic
3	74	M	,,	Positive	300	Diabetic
4	40	M	,,	Negative	85	Non-diabetic
5	21	M	,,	Positive	75	Renal glycosuria
6	46	M	Negative	,,	100	,, ,,
7	47	M	Positive	,,	260	Diabetic "
8	53	M	,,	,,	290	,,
9	17	F	,,	,,	270	,,
10	50	M	,,	,,	170	,,
11	44	F	,,	Negative	124	Non-diabetic
12	60	M	,,	Positive	120	Renal glycosuria
13	72	F	,,	Negative	110	Non-diabetic
14	25	M	,,	Positive	340	Diabetic
15	26	M	,,	,,	90	Renal glycosuria
16	34	M	,,	,,	220	Diabetic
17	55	M	,,	Negative	100	Non-diabetic
18	65	M	Negative	Positive	130	Renal glycosuria
19	48	M	Positive	,,	125	,, ,,
20	47	F	,,	Negative	100	Non-diabetic
21	51	F	,,	Positive	270	Diabetic
22	22	F	,,	,,	104	Renal glycosuria
23	67	M	,,	Negative	183	Diabetic
24	35	M	Negative	Positive	90	Renal glycosuria
25	21	M	,,	,,	190	Diabetic
26	52	M	,,	,,	210	Post-gastrectomy hyperglycaemia

Six were known diabetics referred with chest symptoms and found to have active tuberculosis (Cases 7, 9, 14, 16, 21, and 25). Clinitest and clinistix were positive in five, but in one (Case 25) clinistix only was positive. Blood-sugar levels were 260, 270, 340, 220, 270, and 190 mg. per 100 ml. respectively.

In five cases diabetes was diagnosed without the patients being aware of their diabetic symptoms (Nos. 1, 3, 8, 10, and 23); three of these had tuberculosis and the other two had carcinoma of the lung. Clinitest and clinistix were both positive in the first four but clinitest only in the fifth, whilst blood-sugar estimations at the time of the positive findings were 280, 300, 290, 170, and 183 mg. per 100 ml. respectively.

In eight cases renal glycosuria was present (Nos 5, 6, 12, 15, 18, 19, 22, and 24). Clinitest and clinistix were both positive in all but three (Cases 6, 18, and 24), in which clinistix only was positive. The blood-sugar levels in these eight cases were 75, 100, 120, 90, 130, 125, 104, and 90 mg. per 100 ml. respectively. Oral glucose-tolerance tests confirmed the presence of a low renal threshold for glucose in the eight cases. The lowest threshold was 75 mg. per 100 ml. (Case 5).

In the six non-diabetics clinitest gave a positive result owing to the presence of reducing substances, but clinistix gave a negative result, indicating that there was no glucose present (Cases 2, 4, 11, 13, 17, and 20). The blood-sugar levels were 100, 85, 124, 110, 100, and 100 mg. per 100 ml. respectively, and the reducing substances giving a "trace" reaction with clinitest in these six cases were accounted for by the drugs being taken by the patients at the time.

In one patient clinitest was negative and clinistix positive, with a blood-sugar level of 210 mg. per 100 ml. (Case 26). This patient, a non-diabetic, was found to have a post-gastrectomy hyperglycaemia.

Discussion

Clinistix was used specifically for detection purposes, and is extremely accurate and reliable. It is more specific than clinitest for detecting glucose in that there are fewer false positives, and from the point of view of detecting diabetics clinistix is more dependable than clinitest. In 930 out of 942 cases the results of the two tests were identical (Table II)–916

TABLE II.—*Results of Urine Tests in 942 Cases*

		Clinistix		Total
		Positive	Negative	
Clinitest	Positive ..	14	7	21
	Negative ..	5	916	921
Total ..		19	923	942

being negative and 14 positive. In seven instances clinitest was positive and clinistix negative. Further investigation showed that in all these cases the positive result was due to reducing substances other than glucose. It is worth emphasizing that there have been only a few false positives, although the tests have been carried out by nurses outside the laboratory. In five cases clinistix was positive and the clinitest negative (Cases 6, 18, 24, 25, and 26): these included three renal glycosurics, one diabetic, and one patient with a post-gastrectomy hyperglycaemia. In all these the trace of glucose present was detected by clinistix but failed to be seen on clinitest.

A number of factors such as variations in the temperature and *p*H of the specimen of urine, and also variations in the amount of ascorbic acid present, affect the sensitivity of the enzyme test and the intensity of the colours, thus making the test unreliable for quantitative use. Warnings about the unreliability of the enzyme test as a quantitative test have already been given by Hunt *et al.* (1956), and Tunbridge, Paley, and Coulson (1956).

The test is, however, of great value in detecting glycosuria and may be used for screening purposes in any busy clinic, such as a chest clinic, medical, surgical, and ophthalmological out-patient departments, and antenatal and post-natal clinics. It should prove invaluable to the general practitioner both in his surgery and during domiciliary consultations. The test has little place in the day-to-day management of diabetic patients having insulin.

Conclusion

This study has shown the reliability of clinistix in detecting glucose. The simplicity of applying and interpreting the test has been substantiated during the course of this trial.

I thank the Ames Company (London) Limited for supplies of clinitest reagent tablets and clinistix reagent strips; Dr. Victor Springett for helpful criticism and permission to carry out the field trial; the consultant staff of the Birmingham Chest Clinic for permission to study patients under their care; Sister M. Hamilton and her staff for carrying out a large number of urine tests; and Miss F. L. Tomkins for assistance with the estimation of blood-sugar levels.

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The University of London has authorized the expenditure of the total amount of money necessary for completing the School of Pharmacy in Brunswick Square, Professor W. H. LINNELL, Dean of the School, told the council of the Pharmaceutical Society recently. In 1935 the cost was put at £350,000. To-day it would be £1,300,000. Although the official date for the completion of the new building was next December, teaching, he said, would begin in October.

A QUICK AND EASY METHOD FOR BLOOD-SUGAR ESTIMATION

BY

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The need for a speedy and easy method of blood-sugar estimation has long been recognized, especially in the prompt diagnosis and correct treatment of certain medical emergencies, and particularly those associated with diabetes mellitus. Most of the standard methods of blood-sugar estimations require apparatus and techniques rendering them unsuitable for use outside the laboratory.

Hall (1950) and Lee (1954) respectively modified Haslewood and Strookman's (1939) method and Sumner and Graham's original work using dinitro-salicylic acid (Sumner and Graham, 1921; Sumner, 1924–5, 1925). The final methods are quick but still require a number of manipulations and the external application of heat.

The method presented here is extremely easy, apparatus is compact, no external heat is required, and it is very quick.

Method

Reagents.—(1) Tablet A: salicylsulphonic acid is the protein-precipitating agent. (2) Tablet B, for determining the reducing sugars, consists of copper sulphate, sodium hydroxide, sodium bicarbonate, and citric acid (Patent Nos. 2, 387, 244).

Procedure.—In a small test-tube provided with the kit,* water is added to mark 2, and tablet A is then placed in this water. The solution thus formed precipitates proteins; blood is then added to mark 3 on this test-tube. In the present study blood was actually delivered to the deproteinizing fluid by means of a 1-ml. shellback pipette. A rubber bung is placed in the mouth of the test-tube, which is vigorously shaken. A very fine precipitate ensues. A filter cone provided is placed in the top of a second, identical test-tube. The brown mixture is filtered into the second tube and the clear filtrate collected up to mark 1. One tablet B is added to the filtered solution. The fluid boils without external heat being applied, and when this stops the test-tube is shaken three or four times; after a wait of 30 seconds the colour is compared with the scale provided in the kit: blue = 100 mg./100 ml., green = 150 mg./100 ml., and orange = 200 mg./100 ml.

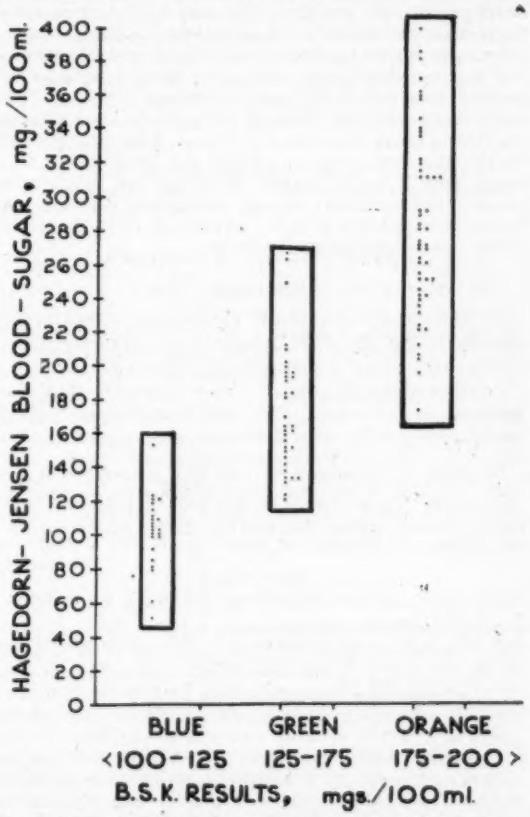
Selection of Patients and Experimental Design.—The blood samples were obtained by venepuncture from patients during visits to the Diabetic Clinic, General Infirmary at Leeds. The blood was placed in a special oxalated tube. At the close of each clinic, estimations were done on these samples by an independent worker using the new method under constant and ideal conditions, while routine Hagedorn–Jensen estimations (Hagedorn, Halstrom, and Jensen, 1935) were also made on the same specimens, with only 1–2% error, and these were done in a different laboratory. This eliminated any unconscious bias in either estimation. Three workers with varying laboratory experience used the new method. Workers X and Y did the estimations with the new blood-sugar kit (B.S.K.) under standard conditions with respect to light, time, and continuity. Worker Z was not allowed such constant conditions.

*Kindly supplied by Ames Co. (London) Ltd.

Results

The results obtained by the Hagedorn–Jensen method showed that none of the groups estimated by three workers was biased by an excess of either high or low blood-sugar levels.

Worker X did 105 estimations with the B.S.K., and these were graded blue, green, and orange according to the chart. The division between blue and green was arbitrarily taken at 125 mg./100 ml. and between green and orange at 175 mg./100 ml. Thus individual results were given not only a grading according to colour but also an estimate of blood sugar in mg./100 ml. For example, a greenish-yellow colour resulting from the B.S.K. was estimated as 170 mg./100 ml., whilst the standard Hagedorn–Jensen method for blood-sugar estimation revealed 184 mg./100 ml. When all the



Comparison of blood-sugar determinations by the Hagedorn–Jensen method with the new blood-sugar kit.

B.S.K. estimations done by worker X are compared with the independent Hagedorn–Jensen estimations there is a remarkable agreement (see Chart). The correlation coefficient r is + 0.9. When the 88 results from worker Y are analysed there is not such close agreement, and the correlation coefficient r = + 0.78. The 106 results from worker Z gave a correlation coefficient of + 0.85.

Discussion

It will be seen from the Chart that no patient given an "orange" rating by B.S.K. had a true blood sugar as revealed by the Hagedorn–Jensen method below 160 mg./100 ml. Conversely, only one patient given a "blue" rating by the B.S.K. had a blood sugar level over 125 mg./

100 ml. when estimated by the Hagedorn–Jensen method. In over 300 estimations, only once was there a widely differing result which could have caused an error in treatment. The B.S.K. revealed 110 mg./100 ml. whilst the Hagedorn–Jensen method showed 212 mg./100 ml. The worker questioned the blue-grey colour of the B.S.K. reaction, and this estimation should have been repeated.

The accuracy of results depends on the appreciation of a range of colours. In a few estimations this was difficult, particularly when a muddy or grey tinge appeared in the final sample. Worker X was able to distinguish a muddy blue from an orange grey with reasonable accuracy in all shades, whilst workers Y and Z had difficulty. This problem was resolved by repeating all estimations when an unreliable colour was obtained. Usually a pure colour was finally produced. No explanation has been found for this "muddy" colour, and it occurred 22 times out of 300 estimations.

There is no doubt that ideal conditions and laboratory experience improve the accuracy of this method. Nevertheless, with a little practice, proficiency is attained whereby blood-sugar estimations can be done that are of inestimable value in the correct treatment of emergency medical patients.

It was felt that further refinement of the test was not essential since the B.S.K. was not designed to usurp the established blood-sugar methods. In emergency practice the question is usually not the actual level of blood sugar but whether the level is low or whether it is high. The B.S.K. would appear to be capable of giving this information speedily and accurately enough for clinical purposes. A further extensive trial is under way to test these laboratory findings under emergency conditions.

Summary

A new simple and quick blood-sugar estimation is described. Results when compared with the Hagedorn–Jensen method are in remarkable agreement. Varying conditions and experience of the workers are shown to influence the results. The new blood-sugar method would appear to be helpful in medical emergencies.

We thank all the patients for their kind co-operation in this study; Professor R. E. Tunbridge for permission to study his patients and helpful criticism of the MS.; and Mr. J. Bunce, Director, Ames Company (London) Ltd., for the supply of B.S.K. and his help at all times.

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The John Horniman Home is a home for children with severe physical handicaps such as cerebral palsy, muscular dystrophies, paralysis due to poliomyelitis, or severe heart disease. The home, situated in Worthing, is run by the Invalid Children's Aid Association, and can accommodate 24 children. It takes both boys and girls between the ages of 7 and 16. They are usually admitted for periods of two to eight weeks, either as a holiday to give their parents a respite or for convalescence after illness. The first object of the home is to help families in carrying the burden of a severely handicapped child. In special cases a long stay with education can be arranged. A serious difficulty in running the home, which has now been open for nearly three years, is that there is a peak demand during the summer holidays but vacancies at other times of year. With the skilled staff needed for such work this makes for uneconomic operation, and a more even flow of admissions, especially during the winter months, is wanted. Full details may be obtained from the Invalid Children's Aid Association, 4, Palace Gate, London, W.8.

A RAPID METHOD FOR THE ESTIMATION OF BLOOD SUGAR

BY

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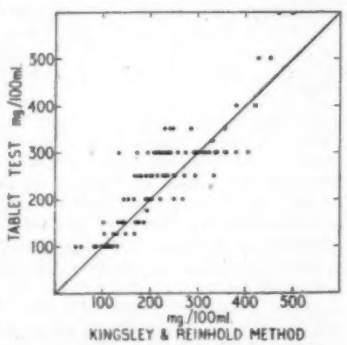
A number of rapid and simple methods for the estimation of the blood sugar have been described (Hall, 1950; Lee, 1954). Although the results obtained by these methods agree with those in routine laboratories, they are not really suitable for performance by a busy house-physician at the bedside or in a ward side-room. A very simple procedure involving the use of tablets has recently been developed, and its use has been studied in the wards and the Diabetic Clinic of the Middlesex Hospital.

Method

The equipment is contained in a small box and consists of two test-tubes each with three graduations (at 1, 2, and 3 ml.), a test-tube stand, a dropper, a box of filter cones, and two bottles of tablets (A and B). Tablet A is dissolved in 2 ml. of water in one of the tubes and blood is added to the 3-ml. mark. The proteins are rapidly precipitated and the mixture is allowed to filter through one of the filter cones into the second tube until 1 ml. of filtrate has collected. Tablet B is then added, and after the contents of the tube have boiled the froth is shaken down and 30 seconds later the colour is compared with that on a chart provided: blue or blue-green = 100 mg./100 ml. or less, green = 150 mg./100 ml., and orange = 200 mg./100 ml. or more.

Blood samples were obtained by venepuncture and a fluoride-oxalate anticoagulant mixture was used. If for any reason the estimation could not be performed immediately the specimen was stored, but not frozen, in a refrigerator. In practice it was found preferable to measure the volumes of blood and water with an ordinary 2-ml. insulin syringe. If the result was more than 200 mg./100 ml. the estimation was repeated, using 2.5 ml. of water with tablet A and adding 0.5 ml. of blood. If this still gave maximum reduction the test was repeated, using 2.75 ml. of water and 0.25 ml. of blood. For higher dilutions the blood was diluted with water first. No attempt has been made to perform the estimations under set conditions of lighting; so far as possible, the method has been studied as it would be used in practice—artificial or daylight being used as circumstances required.



Comparison of blood-sugar determinations by the method of Kingsley and Reinhold with the new blood-sugar kit.

Duplicate samples of each specimen were sent to the Courtauld Institute of Biochemistry at the Middlesex Hospital, where blood sugars were estimated by the method of Kingsley and Reinhold (1949), using sodium tungstate and sulphuric acid as protein precipitant. The error of this method is ±6 mg./100 ml.

Results

The results obtained by the tablet method and the Kingsley–Reinhold method are compared in the Chart. The

correlation coefficient is 0.84, but there is a slight overall tendency for the tablets to give a high reading. In practice it was found that the mid-point between 100 and 150 mg./100 ml. gave a colour that could be recognized quite satisfactorily, and some readings of 125 mg./100 ml. are therefore shown. The mid-point 150–200 mg./100 ml. proved less easy to detect. Occasionally an impure colour was obtained and it was found necessary to repeat the test.

Discussion

A rapid and simple method for the performance of blood-sugar estimations in the out-patient clinic, consulting-room, or ward side-room would help the control of treatment of diabetes and in the management of diabetic emergencies.

This method cannot be recommended even as a screening procedure for the diagnosis or exclusion of diabetes. Definite diagnosis of this condition is of great significance to the patient and only methods of proved accuracy should be used. The tablet method is not really suitable for control of treatment in hospital diabetic clinics, where arrangements can usually be made for blood-sugar estimations by routine methods. It may be helpful for practitioners supervising the treatment of diabetics in their surgeries, an occasional check on the blood being desirable in all cases.

The method has proved very useful in the management of diabetic emergencies in hospital. In post-operative patients, in cases of ketosis, and in cases of suspected hypoglycaemia a rapid guide to treatment has been obtained. At night and at week-ends its use has often made it unnecessary to call on the services of the resident biochemist. In hospitals without a 24-hour biochemistry service this equipment would be very valuable.

I am indebted to the staff of the routine laboratories of the Courtauld Institute of Biochemistry of the Middlesex Hospital, where the control estimations of the blood sugar were made. I thank Dr. J. D. N. Nabarro, under whose guidance this paper was written, for allowing me to perform these tests on his patients, and the Ames Company (London) Ltd. for the provision of the blood-sugar kit.

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Medical Memoranda

Treatment of Ammoniacal Dermatitis with Folic Acid and Soya-bean Milk

The oral administration of either folic acid or soya-bean flour encourages the growth of lactobacilli and possibly inhibits the growth of ammonia-producing organisms in the stools. It would seem rational to try to cure ammoniacal dermatitis in infants by the oral administration of these substances.

The following report concerning the treatment of chronic napkin rash by the administration of (*a*) folic acid and (*b*) soya-bean milk may prove of value to others faced with a similar problem.

Five infants aged between 3 and 16 months, who had suffered from severe ammoniacal dermatitis in which there was desquamation and exudation for periods ranging from 1 to 12 months, and who failed to respond to routine methods of treatment, were given folic acid by mouth. The dosage was 10 mg. daily as an elixir. Routine treatment to napkins and buttocks continued unchanged, while in each case the infant's diet remained similar to that in use immediately before the start of folic acid therapy. After a month three patients showed slight improvement, but the other two were no better. In view of this unsatisfactory response to treatment folic acid was withheld and soya-bean milk was given. The milk consisted of 1½ oz. (42 g.) of soya-bean flour added to a pint (570 ml.) of water. This was used to replace half the quantity of cow's milk normally taken daily, so that patients consumed 10 to 20 oz. (285 to 570 ml.) of soya-bean milk each day. The routine treatment of the napkins and buttocks continued as before and the infants' diets were not altered. Within five days of starting the treatment all the patients had shown some improvement in the condition of the buttocks, while four of them had become more contented. Within two weeks the appearance of the skin was normal in all cases. During the third and fourth weeks of treatment there was no deterioration, though very transitory erythema of the skin in the napkin area was sometimes noted.

In view of these findings further observations on the effect of treatment with soya-bean milk in cases of ammoniacal dermatitis would be useful, and it should be given a trial in all resistant cases of this condition. Soya-bean flour can be obtained from Soya Foods, Ltd., London, E.C.3, and possibly from grocers. Its food value compares favourably with cow's milk, so that it is possible to rear infants from birth on this food. The cost of soya-bean milk is approximately twopence a pint. It is possible that treatment with larger doses of folic acid than were used in these few cases might prove more satisfactory, and it may be that cases resistant to soya-bean therapy might respond to large doses of folic acid.

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Pregnancy in Addison's Disease

Adrenocortical insufficiency is not necessarily incompatible with fertility. In earlier days the hazards of pregnancy in such circumstances were well known and were such as to make conception inadvisable or therapeutic abortion necessary. Now with modern complete substitution therapy the prognosis of pregnancy in Addisonian patients is much better. Approximately 60 such cases are on record, and in 14 of these pregnancy has occurred in the past five years when potent adrenocortical hormones have been available (Hendon and Melick, 1955). Only 7 cases appear to have been reported since cortisone has been used for maintenance. Below is a further case in which pregnancy occurring during treatment of Addison's disease was brought to a successful conclusion.

CASE REPORT

A nulliparous 23-year-old woman who had been married for four years presented with generalized weakness, tiredness, loss of weight, oligomenorrhoea, and skin pigmentation. There was no gastro-intestinal upset and no past history of tuberculosis. She was dehydrated, the skin was inelastic, the tongue dry, and the oral mucous membrane pigmented. Her blood pressure was 70/50 mm. Hg. Serum electrolyte values were compatible with Addison's disease: sodium 130, potassium 5.7, chlorides 69 mEq. per litre. Blood urea 93 mg. per 100 ml.; haemoglobin 85% (Haldane). Urinary 17-ketosteroid excretion 2.9 mg. in 24 hours. Radiographs of chest and abdomen normal. On a standard water load a diuresis of only 50% was recorded in the first four hours.

Initial therapy consisted of deoxycortone acetate (D.C.A.) 10 mg. daily by injection, together with 6 g. of salt a day and an adequate fluid intake. Her general condition improved on this treatment; the blood pressure rose to 110/70 mm. Hg, the electrolytes returned to normal values, and she gained 10 lb. (4.54 kg.) in weight, thus confirming the diagnosis of Addison's disease. A month later it was decided to institute maintenance therapy consisting of an implant of 200 mg. D.C.A. and 3 g. of salt a day. After about six months additional salt was given to overcome increased weakness and lethargy. Her blood pressure and serum electrolytes continued normal. It was decided to

give a further implant of D.C.A., 200 mg., and to continue 3 g. of salt a day.

Two months later she was found to be eight weeks pregnant. She complained of morning sickness, weakness, and lassitude at the end of the third month of pregnancy in spite of continued maintenance therapy. She was admitted to hospital, and improved on bed rest, adequate fluid intake, and dimanhydrinate ("dramamine") to a total of 100 mg. daily. As previous maintenance therapy had been inadequate this was changed to cortisone, 25 mg. daily by mouth, with trimethyl deoxycorticosterone, 60 mg. intramuscularly monthly, and salt, 3 g. a day. The pregnancy progressed satisfactorily on this regimen.

Four weeks before term the patient was again admitted to hospital, and, in addition to the maintenance therapy of 3 g. of salt and 25 mg. of cortisone a day, was now given daily injections of 10–15 mg. of D.C.A., her general condition, blood pressure, and electrolyte levels being the main guide. It was considered inadvisable to give her a longer-acting steroid at this stage. When labour started she was given 100 mg. of cortisone. The second stage was prolonged over eight hours and low forceps under pudendal block analgesia were applied. She was delivered of a living female child of 9 lb. (4.082 kg.). Next day she was given 100 mg. of cortisone, 10 mg. D.C.A., and 3 g. of salt, and the day after a return was made to the previous level of cortisone 25 mg., D.C.A. 10 mg., and salt 3 g. daily.

She had a mild puerperal infection which responded adequately to chemotherapy. Two weeks later she had oedema of the ankles and a blood pressure of 160/110 mm., together with serum electrolyte values of sodium 148, potassium 3, and chlorides 108 mEq. per litre. D.C.A. and salt were therefore stopped but cortisone continued. Within a week the blood pressure was normal and the oedema had subsided. Smaller doses of D.C.A. with a varying salt supplement were started again, and a week later D.C.A. was replaced by trimethyl deoxycorticosterone. The skin pigmentation, which decreased with the initial treatment, increased again near term, but had become less marked by the end of the puerperium. Lactation was successful to start with, but because of cracked nipples it was artificially suppressed after the second week by ethinyloestradiol.

COMMENT

Before 1949 the maternal mortality among patients with Addison's disease who became pregnant was 35–45% (Brent, 1950), but since the introduction of replacement therapy with adrenocortical hormones and cortisone the prognosis is much better. Cases of successful pregnancy in Addison's disease have been recorded by Simpson (1946), Knowlton *et al.* (1949), Brent (1950), Richards (1952), Rolland *et al.* (1953), Lutwyche (1953), Hunt and McConahey (1953), Hendon and Melick (1955), and De Gennes *et al.* (1956). In cases reported so far in which maintenance has been by cortisone in addition to D.C.A. and salt there has been no maternal mortality and the incidence of associated complications has been much lower.

In the case now described Addison's disease was diagnosed and treatment started ten months before pregnancy occurred. The rapidity with which conception followed therapy suggests that the treatment was an important factor in the patient's fertility.

In the first trimester of pregnancy nausea, vomiting, and other gastro-intestinal disorders are more likely to occur, leading to electrolyte disturbance and thus precipitating an adrenal crisis (Brent; Hunt and McConahey; De Gennes *et al.*). In the present case there was only a slight upset at this stage, which was easily corrected. It was thought advisable to start cortisone at this point. In the second half of pregnancy in Addisonian patients there may be an increase in the remaining adrenal function which may ameliorate the adrenal insufficiency state, and substitution therapy may have to be reduced accordingly (Knowlton *et al.*; Hunt and McConahey; De Gennes *et al.*).

Before the introduction of cortisone 25–50% of patients being treated for Addison's disease had hypoglycaemic episodes (Soffer, 1946). In the present case there were no symptoms to suggest this, nor did blood sugar determination, which was carried out monthly throughout the pregnancy, give abnormal results at any time. During labour the added stress of physical exertion, haemorrhage, pain, surgical intervention, and anaesthesia may be too great, and in the early puerperium the physiological diuresis with excretion of sodium, and the removal of adrenal hormones provided by the foetal adrenals, may lead to development of an Addisonian crisis (Knowlton *et al.*; Brent; De Gennes *et al.*). Immediately before delivery, therefore, the patient should be treated as for an impending crisis and every measure taken to avoid undue stress. In this case the dosage of cortisone was increased before delivery and the second stage of labour curtailed by the application of low forceps under regional block analgesia with minimal sedation.

Before the advent of cortisone lactation rarely occurred in these cases, and it has been suggested (Rowntree and Snell, 1931) that this might be due to atrophy of the mammary glands. Breast-feeding used to be forbidden, as it acted as an additional stress on the already deficient metabolism of the mother. There are earlier reports of lactation being artificially suppressed, but with adequate replacement therapy successful lactation is possible without great risk to the mother (Lutwyche, 1953). In the present case lactation was successful, and was artificially suppressed only because of technical difficulties.

Hypertension, cardiac failure, oedema, or potassium deficiency may occur from overdosage with D.C.A., and such symptoms arising in the latter half of pregnancy might lead to confusion with pregnancy toxaemia (Brent). Alterations in blood chemistry and disappearance of symptoms on withholding steroid therapy for a few days will assist the differential diagnosis. Hence it is preferable at this stage to give short-term daily injections of D.C.A. rather than such long-term therapy as pellet implantation or trimethyl deoxycorticosterone injections. Theoretically less D.C.A. should be needed in the second and third trimesters because of the adrenal hormones supplied by the foetal adrenals and the high level of circulating sex hormones, which also have a salt-retaining effect (Soffer, 1946; Samuels *et al.*, 1943; Knowlton *et al.*, 1950). However, in the present case an increased dosage of D.C.A. was necessary during this period.

Signs of steroid overdosage appeared two weeks after the puerperium, but responded well to withdrawal of treatment for a week, after which a maintenance dose of D.C.A. and salt was easily achieved. Three weeks later the patient was discharged from hospital. Mother and child are both doing well.

I am grateful to Dr. I. Gilbert, consultant physician, and Dr. R. Crawford, consultant obstetrician, under whose supervision the patient was treated, for their permission to report this case.

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Reviews

BRITISH SURGERY

Operative Surgery. Under the general editorship of Charles Rob, *M.C.*, M.Chir., F.R.C.S., and Rodney Smith, M.S., F.R.C.S. (Volume I—Introductory, Surgery of Trauma, Abdomen (Part); Volume II—Abdomen (Completion). £5 10s. per volume. Index to all eight volumes £2.) London: Butterworth and Co. (Publishers) Ltd. 1956.

In the introduction to this work the editors wisely state that the best way to learn how to operate is to act as assistant to a master of the craft. Failing that, the next best way is to learn from a well-illustrated account of the various operations. In such an account the emphasis may be greater either on the written description or on the pictorial representation. In these superb volumes, which are but the advance-guard of a monumental series, the emphasis is purposely laid on the illustrations, which are very numerous. The descriptive part is just sufficient to give a connected account of the operative procedures. When complete this will be the most elaborate and ambitious work of its kind ever published in Great Britain.

The general editorship has been undertaken by two distinguished surgeons, who have as associate editors men whose names are a guarantee of good judgment. The contributors have been selected because of their special skill or interest in a particular subject; they form a representative cross-section of the younger school of surgeons throughout Britain. An interesting editorial problem is mentioned in the introduction. Each contributor was asked to describe those methods which he had found most efficient; on certain occasions the two chief editors felt "a certain disapproval," but left the matter to the expert. As to which particular methods their remark applies to they discreetly keep silence.

The first volume, after an introductory section dealing with technique and about 100 pages given to the surgery of trauma, is chiefly devoted to gastric surgery; Norman Tanner deals with partial gastrectomy and with gastrectomy for cancer, while Professor Rob describes the operation of vagotomy. Volume II deals with the surgery of the small and large intestines, the pancreas, spleen, liver, and bile passages. As might be expected, Rodney Smith contributes the section dealing with pancreatectomy, and we note that he received a personal communication from that master of technique, Cattell.

In a short review there is no space for a detailed survey of all the contributions. Suffice it to say that the illustrations, which come from many artists, reach a high standard, and the whole production provides a welcome testimony to the authoritative place which British surgery has attained. We look forward to the succeeding volumes with great expectation.

ZACHARY COPE.

ANAESTHETIC ACCIDENTS

Anaesthetic Accidents. By V. Keating, M.B., B.Ch., D.A., F.F.A.R.C.S. (Pp. 261+vi; illustrated. 25s.) London: Lloyd-Luke (Medical Books) Ltd. 1956.

The reports on anaesthetic deaths recently published under the auspices of the Association of Anaesthetists have pinpointed in no uncertain manner the way in which these and other less serious preventable accidents occur. Not only anaesthetists but also medical practitioners in general, and both nursing and lay administrators, are taking a very close interest in this matter. Any book on this subject is therefore topical and will be read widely with critical eyes.

Keating's book is a scholarly and up-to-date account of anaesthetic accidents, in what might be called the classical manner. Thus pride of place is given to the circulatory and respiratory accidents, and these are discussed fully from the pharmacological and physiological aspects. Pulmonary and neurological complications and those due to intravenous and spinal anaesthesia follow and are all treated at length. Further chapters deal with endotracheal anaesthesia, posture, and the relaxants, while a few remarks are included on explosions, safety precautions in general, and medico-legal considerations. The emphasis, however, might have been different. Inhalation of vomit, for example, is more important as a preventable cause of death and morbidity than primary cardiac arrest: a future edition should include vomiting in the index. The more traditional arrangement of the text used here is an orderly one, and is helpful in what is essentially a book for those studying for examinations and for those who seek for references to the literature on the complications of anaesthesia. Illustrations are not a strong point, there being only 13 simple line drawings, though these are very helpful as far as they go.

For anyone who really wants to get to practical grips with the problem of anaesthetic accidents and deaths the reports of the Association of Anaesthetists should be a first choice. For more leisurely study of the complications from an academic point of view Keating's book is invaluable and its place on the library shelf assured.

W. W. MUSHIN.

PRACTICAL UROLOGY

Practical Urology. Case-Comments and Late Results. By Alex. E. Roche, M.A., M.D., M.Ch., F.R.C.S. (Pp. 258+xii; illustrated. 35s.) London: H. K. Lewis and Co. Ltd. 1956.

This short, very readable volume describes the clinical and radiological aspects of 51 urological cases, some of them typical. The symptoms in each are presented first, and are followed by the clinical and pathological details, also the after-history and the late result when it is known. The work is entirely from the experience of the author, with no references to the literature. A commentary is usually given in which the writer emphasizes various principles of urological diagnosis which the case illustrates, with details of the pathology of the condition or variations which may occur in the symptoms and physical signs, often flavoured with his well-known humour or adorned with classic quotation. Among the cases described are a number of renal, ureteric, and vesical calculi, in their many clinical variations. Several cases of renal tumour, renal tuberculosis, and hydronephrosis of special interest, congenital lesions of the upper urinary tract, and a few rarities such as aneurysms of the renal artery, are also included. Only about one-fifth of the reports relate to diseases of the bladder, prostate, and urethra, so that the emphasis is on diseases of the upper urinary tract, in which radiographic diagnostic aids are so valuable. There is no pretence at over-elaboration in the method of investigation by techniques such as aortography, but a simple, straightforward, over-all picture in each instance is given. The reports contain much surgical wisdom presented in a way easy to remember.

The book is a valuable and interesting ancillary to the standard textbooks of urology. In addition to being of use to the urologist, the radiologist, and the general surgeon, it should be of help to senior students and to general practitioners. It is well produced, and the illustrations in general are good.

L. N. PYRAH.

FREUDIAN PSYCHOLOGY

A Primer of Freudian Psychology. By Calvin S. Hall. (Pp. 137+xii. 13s. 6d.) London: George Allen and Unwin Ltd. 1956.

The author of this primer, who is a professor of psychology in Ohio, has grasped the fact that the importance of Freudian psychology lies in its formulation of a theory of mind which is relevant to normal as well as to abnormal psychology. It has seemed to him, therefore, a good idea to extract from Freud's writings such passages as deal with normal mental function, to paraphrase them so far as possible in non-technical language, and so to build up an outline of *normal* psychology suitable at the same time for university students and for the general reader. The risks of this procedure, of which the author is well aware, are that in the work of

collation, paraphrase, and exposition the substance of the original texts may be distorted by faulty definition, lack of precise understanding, and defects in the balance of presentation. In his preface Professor Hall expresses the hope that he has been able to escape such errors of commission or omission; and up to a point—as where he quotes directly from Freud or holds closely to the original texts—he has achieved some measure of success. This is offset, however, by a considerable number of theoretical misprisions; also by the fact that his illustrations are drawn largely from the field of preconscious rather than that of unconscious psychology—a labour-saving but often misleading device. It would be invidious in a short notice to single out and argue particular examples of misunderstanding of Freudian definitions; and perhaps it is sufficient to say that, while the primer may serve the purposes of the university student, who needs no more than a smattering of psycho-analysis, it would not do for any accredited student of the subject. The general reader would in any case do better to study some of Freud's own hornbooks, even if these are concerned with abnormal as well as normal psychology.

EDWARD GLOVER.

CURRENT CONCEPTS OF PSYCHOTHERAPY

Contemporary Psychotherapists Examine Themselves. By Werner Wolff, Ph.D. (Pp. 299+xvii. 51s.) Springfield, Illinois: Charles C. Thomas. Oxford: Blackwell Scientific Publications. 1956.

The author states in his preface: "The present study is a consideration of the status of psychotherapy as viewed by the adherents of various schools. The tremendous growth of psychotherapy in our time has resulted in a need for clear information on the basic differences, goals, and successes of the various schools of therapy." The method employed was a "guided interview" based upon the answers given to an elaborate questionary. Of the 50 psychotherapists approached 43 responded, the majority it would seem with alacrity. Specimen interviews fill the major part of the book.

The author concludes that "the present survey seems to indicate that contemporary psychotherapists recognize that psychotherapy is in a state of fermentation and development." Put more bluntly, they disagreed on most of the wide issues put before them. It is, however, interesting to note among "major trends": (1) The desirable length of treatment on the average was held to be one to two years with two or three sessions a week. (2) Directive and didactic as opposed to a more passive approach was becoming more common. (3) "The average rate of cure was: full cure in 15–20% of patients, improvement in 20–50%, and failure in 15–20%." (4) Psychotherapists found they got their best results with neuroses and hysterias, were less effective with phobias, psychopaths, and delinquents, and least effective with psychotics, obsessionals, and homosexuals. (5) "Very few definite statements concerning the permanency of cures were made. The reason was a lack of systematic follow-up studies. Only 10% of our interviewees made a systematic follow-up of their cases; 34% made an occasional follow-up of their patients; 34% stated that they left the initiative to their patients; and 22% did not care for a follow-up." The reply given by Dr. Joseph Wortis to the question: "Which type of psychotherapy do you think is best and why?" illustrates the difficulties and may commend itself to many:

> "Before answering this question, it would be well to define our terms. Psychotherapy, according to my dictionary, is 'treatment of disease, especially nervous disorders, by psychological means.' Unfortunately, however, we do not all agree on what disease and treatment mean. I would like to say at the outset that I cannot accept a definition of nervous and mental disease that includes practically every kind of disorder or discontent and involves almost all humanity.
>
> "I also think it would be better if we did not use a concept of treatment that includes every kind of real and sensible advice, insight, and help that can be held out to troubled people. I should prefer, from a practical point of view, to limit the concept of disease to the relatively few kinds of disorders that draw on the specific technical equipment of physicians. Unfortunately, however, so large a section of our educated population has been persuaded that the way to achieve personal happiness is through psychotherapy that all private practising psychiatrists, including myself, are called upon to 'treat' people who for one or another reason are very unhappy but by no means diseased. From this point of view, psychiatry has nowadays spread itself out too far and taken on a bigger piece of human discontent that it can ever handle, to say nothing of eliminate. Unless psychiatrists make a distinction between the common or garden variety of unhappiness encountered in our society and bona-fide psychiatric disease, they will be contributing to the current confusion."

DESMOND CURRAN.

The publishers of *Blakiston's New Gould Medical Dictionary* say that 12,000 new terms have been added and 8,000 changes made for the second edition of this 1,463-page dictionary. Some of these are of surprisingly recent introduction for a work of this kind, which includes, for example, meprobamate, prednisone, and penicillin V. The proprietary names of many drugs are also included, though whether a dictionary is the place for them seems questionable. The spelling is American, so that "hematology," for instance, is only to be found so spelt. But the range of words and proper names is commendably international; even the names of living Englishmen appear—among them Geoffrey Hadfield, Sir Leonard Rogers, and F. Parkes Weber. The book is published by McGraw Hill Publishing Co. Ltd. for 86s. 6d.

About 500 tables in *Handbook of Biological Data* list the measurable attributes of a very wide range of plants and animals, including man. The data include such variables as nutrient requirements, biochemical changes, composition of tissues, chromosome numbers, environmental effects on living creatures, and taxonomic classifications. It is edited by W. D. Spector for the American National Academy of Sciences–National Research Council, and published by W. B. Saunders for 52s. 6d.

The third edition of *List of Films on Human and Comparative Parasitology* has now been compiled under the aegis of the International Scientific Film Association and published by its Netherlands branch. The catalogue includes all the known films on the subject. The third edition has an index according to the general classification of parasites, simplified for the purpose of the list. The information is given under countries; the films available from each country are listed, together with a short description of the subject matter, type of photography, running time, and address from which it is obtainable. Nineteen countries are represented. The catalogue is obtainable from the Hon. Treasurer, Netherland Scientific Film Association, Catharijnesingel 59, ingang Sterrenbos, Utrecht, Holland, price 10s.

In their *Textbook of Physiology and Biochemistry* Professors G. H. Bell, J. N. Davidson, and H. Scarborough give students the conjoined experience of a physiologist, a biochemist, and a clinician. First issued in 1950, the book has gone through a second edition, been twice reprinted, and now reached a third edition. The demand for it is thus evident, and so that it may continue to be adequately satisfied the authors have made considerable alterations to keep the book abreast of recent developments. Text and illustrations remain admirably clear. This fine standard work is published by E. and S. Livingstone Ltd. for 60s.

Professor Alan Moncrieff's booklet *Infant Feeding* was described in these columns as "a clear and practical account, based on much experience," when it first appeared in 1940. Since then it has been reprinted eight times and has now been revised by the author for a second edition. He briefly describes the principles and practice of breast-feeding, artificial feeding, and feeding the premature infant, combining a useful array of detailed instructions with the injunction set out in the preface "to regard each baby as an individual with his or her own ideas about feeding times and quantities." Young doctors, whether in hospital or general practice, will find much worth learning in this booklet. Edward Arnold Ltd. publish it for 2s.

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THROUGH THE LOOKING-GLASS

In a leading article which went to press before the profession's negotiators on Wednesday last week met the Minister of Health, Mr. D. F. Vosper, we said that if the Government refused, through him, to admit the validity of the Spens recommendations "relations between it and the profession will be at breaking point." The breaking point has been reached. The Government has repudiated the Spens reports, reports drawn up to decide the basis of remuneration of consultants and specialists and of general practitioners in a publicly organized medical service, reports accepted by both Government and profession, the terms of which satisfied doctors that, in a National Health Service they for the most part disliked, their status would be preserved and their remuneration adjusted to the changing value of money. Once doctors were safely inside the Health Service Ministers of Health have tried to avoid honouring their obligation to a nationalized profession. Their efforts were rudely shaken when an independent adjudicator, Mr. Justice Danckwerts, made an award to general practitioners in 1952 based on the Spens formula. Just a year ago the then Minister of Health, Mr. R. H. Turton, was informed that a further claim would be made during 1956, and the profession's negotiators, under the combined chairmanship of Sir Russell Brain for the consultants and Dr. A. Talbot Rogers for the general practitioners, presented their claim in June. They took expert economic and statistical advice before arriving at a betterment factor of 24%. As the Minister denied that the Government had a contractual obligation to honour the terms of the Spens reports our negotiators sought the legal advice of Sir James Millard Tucker on this point. His careful analysis of the situation was presented to the Minister of Health in a cogent document of some 6,000 words. The reply to this was a curt rebuttal in a letter of 94 words from Sir John Hawton, the Permanent Secretary of the Ministry of Health, which in effect said: "We don't agree with you. Test it in the courts." The reply was unmannerly in its curtness. In the Government reshuffle under Mr. Macmillan Mr. Turton was replaced by Mr. Vosper, and last week the Prime Minister took the matter out of Mr. Vosper's hands by recommending the Queen to set up a Royal Commission to inquire into doctors' pay. The *Manchester Guardian* describes this "as quite the wrong instrument for this task." If Mr. Macmillan had given a small advance without prejudice to the major claim and had proposed a Royal Commission on the working and structure of the Health Service generally he would have stood on firm ground, the *Guardian* states, concluding thus: "Now we face a quagmire." It is all a very sad story of evasion and subterfuge, of political expediency, and of double dealing. At any one time during the past years any one of many Ministers of Health could have said: "We don't think the Spens formula and the methods of applying it are really satisfactory. Let's have a look at it together to see if anything more suitable and more practicable can be worked out." But such a straightforward and simple approach seems uncongenial to the political mind and not complicated enough for the civil servant. All they could do was to repeat the White Queen's dictum: "The rule is, jam to-morrow and jam yesterday—but never jam to-day." As we go to press we learn that Mr. Macmillan, in a letter to the Negotiating Committee's chairmen, says that a Royal Commission "does not preclude some interim adjustment." As Alice observed: "It *must* come sometimes to jam to-day."

The White Queen might have been bluffing, but the Chairman of Council, Dr. S. Wand, in an admirably firm reply to the Editor of *Truth* in a broadcast last week made it plain that the medical profession is not, in its present attitude to the Government's attitude. Dr. Wand repeated what he told the General Medical Services Committee last Thursday: the Minister of Health had admitted to the negotiators that "No one can dispute that there is justice in an increase for the doctors." And at the same meeting of the G.M.S. Committee Dr. Wand recalled that in the course of the negotiations with the Ministry of Health in 1950 the Minister of Health had admitted the validity of the Spens formula. The actual words used by the Secretary of the Ministry, in a letter to the B.M.A., were as follows (May 2, 1950): "*The Minister agrees that the Spens Report remains the basis of the remuneration of general medical practitioners until such time as after the usual consultations some other basis is substituted.*" (Our italics.) The Prime Minister's decision to set up a Royal Commission—"some other basis"—has been reached without any consultation. Therefore the Spens report remains the basis of the remuneration of general practitioners, and surely, too, of consultants and specialists, and of hospital staff. The affinity of the

Ministers and the Ministry to the White Queen in *Through the Looking-Glass* is remarkably close.

> "It is a poor sort of memory that only works backwards," the Queen remarked.
>
> "What sort of things do *you* remember best?" Alice ventured to ask.
>
> "Oh, things that happened the week after next," the Queen replied in a careless tone.

What is going to happen the week after next?—a Royal Commission, which is to consider the pay of doctors and dentists and possibly of medical auxiliaries, and "the position of the medical profession in relation to other professional classes in the community." The terms of reference of the Royal Commission have not been announced, nor its composition, but the terms will presumably include what the Prime Minister said would be opportune for an inquiry to embrace: an inquiry wide enough to last two or three years. In the meanwhile, our negotiators were informed last week that the Government are willing to instruct the management side of Whitley Committee B to agree to an interim increase to junior medical staff and dental staff in hospitals. And presumably the management side will be instructed that the increase will be determined "by all relevant factors" and not by the terms of the consultant Spens report. The farce of negotiation with the staff side will be duly conducted but with one side acting on instructions from which it will not dare to budge: it will be conducted "Through the Looking-Glass."

ACTION AND REACTION

The reaction of the G.M.S. Committee to the action of the Minister of Health and the Prime Minister was the same as that of those negotiating for both consultants and general practitioners—anger and distrust. As our report in this week's *Supplement* shows, the G.M.S. Committee seized upon the one essential point in this grave crisis: it is nothing more nor less than the fate of an ancient and learned profession which, trusting in a Government's word, allowed itself to become nationalized in a State-provided medical service. It is not a question of this per cent. or that per cent. in the doctors' pay. The Chairman of Council made this plain in his broadcast last week when he said, to quote *The Times* report, "that if an adjudicator, who ought to be a judge, produced a fair figure in response to the doctors' pay claim, the doctors would accept it." The G.M.S. Committee had no doubt at all that the Spens reports, accepted by the Governments of 1946 and 1948 and by the Minister of Health in 1950, gave the profession a charter of rights in the hazardous experiment of a National Health Service. Without such a charter it would have been folly to enter the Service. Without such a charter it will be folly to continue in it. That is why the G.M.S. Committee is recommending to a special conference of local medical committees that, "unless the Government agrees to an immediate and satisfactory settlement of the profession's claim or to arbitration, general practitioners throughout the country will be advised to send in their resignations from the Service." The Public Health Committee of the B.M.A. last week resolved to back up their colleagues in the present struggle. The Joint Consultants Committee met on Thursday this week and the Council of the B.M.A. had a special meeting on the same day. Sir Russell Brain informed *The Times* last week that the work of the hospitals will not be interrupted, and that the Committee of which he is chairman "will consider what other action they can most usefully take in support of the claim." General practitioners will, of course, also continue to look after their patients, but if this has to be done outside the present N.H.S. it will be according to a scheme the details of which will be made public at the appropriate time. Hospital staffs cannot provide an alternative scheme, because they have to work in hospitals owned by the State. *The Times* of February 23 gave reports from different parts of the country which showed, for example, that doctors in Wales and Scotland, Birmingham, Manchester, Liverpool, Plymouth, Leicester, were behind the B.M.A. in this crisis: "The doctors' trust in the Government has been badly shaken . . . feelings were running very high among Manchester doctors. . . . There seemed little doubt yesterday that very few Scottish areas would fail to respond to the B.M.A. lead—even Edinburgh, a traditionally conservative city in every way, being highly dissatisfied, according to local opinion, with the Government's attitude to the salary claim," *The Times* reports. The same story is told over and over again in the provincial press.

The medical profession to-day is 24% worse off than it was in 1951, and insists upon some readjustment of pay according to the Spens formula. It insists upon sticking to a principle. The Government rejects the principle and seeks for an expedient. This has brought to a head present discontents with many aspects of Britain's National Health Service. Young men are finding it difficult to enter general practice; the frustrated and overworked general practitioner unloads some—and at times much—of his clinical burden on to hospitals; senior registrars are frozen in their jobs and see little prospect of advancing to more responsible positions. Many have emigrated and many are considering this course. All are deeply disturbed at the way Medicine has got mixed up in politics, and long to see it freed from this unnatural

embrace. Dr. Wand gave expression to this when he said to the G.M.S. Committee last week:

> "I am going to ask you, and this is a very serious question, that we have to consider very carefully, not merely whether we can go on working for such an employer now, but whether we can go on working for such an employer in the more distant future. The whole basis on which doctors enter service of this kind depends on trust. Can we any longer trust the Government? If we cannot trust the Government it is not a matter of resigning now, it is a matter of saying we will have nothing to do with any service which is run by any Government; that is, as I see it, the issue before us. The issue is no longer one only of remuneration for the immediate future. . . ."

Before it is too late, as many correspondents suggest, a Health Service might be moulded into a structure within which doctors could work contentedly and so be able to give of their best to the community they live in and care for. There is far more to be settled than the present claim for the fulfilment of the Spens recommendations. That must be settled first. But after that has been done, many consider that the N.H.S. must be overhauled if Medicine is to continue to be a calling and a profession which will attract men and women able to make a valuable contribution to the art and science of Medicine in practice and research.

ANAEMIA IN RHEUMATOID ARTHRITIS

Anaemia is a frequent accompaniment of many chronic diseases not primarily or obviously affecting the haemopoietic system. Thus, chronic renal and hepatic disease, disseminated cancer, and chronic infections are all usually associated with secondary anaemia. Secondary anaemia is also found in rheumatoid arthritis, particularly in patients with active disease, but despite its frequency the exact mechanism of its production is uncertain. Its pathogenesis is undoubtedly complex—which is also true of other secondary anaemias—for not only is the production of red cells impaired but their life-span is shortened. In addition, some patients appear to suffer from genuine iron deficiency. The relevant literature is summarized in three recent papers.[1-3]

The typical anaemia of rheumatoid arthritis differs significantly from that of true iron deficiency, although there are some similarities. The red cells are normocytic rather than microcytic,[4-7] and there is less anisopoikilocytosis than in iron deficiency; similarly, the haemoglobin concentration is reduced,[4 6 7] but not to the same extent as in iron deficiency; the same is true of the serum-iron level.[7] The total iron-binding capacity of the serum (siderophyllin content) is normal in rheumatoid arthritis,[7] but typically increased in iron deficiency. The free erythrocyte protoporphyrin is usually increased.[8] These findings, and the unusually rapid clearance from the plasma of iron injected intravenously,[9] are similar to those found in anaemia associated with infection, in which an increased demand for iron by the tissues has been postulated.[8] J. J. R. Duthie and his colleagues[1] suggest that extensive tissue damage may be the common factor. The low levels of serum iron cannot be accounted for by impaired absorption.[1] That simple iron deficiency—due to failure of absorption or loss of blood—is not an important aetiological factor is shown by the fact that the haemoglobin levels of only a minority of patients can be improved by oral iron; it is possible that genuine iron deficiency plays a part in causing the anaemia in such patients. Intravenous iron therapy with saccharated iron oxide is a more successful treatment[5 10 11]; nevertheless, the blood picture seldom returns to normal in patients with active rheumatic disease. The reason for the superiority of intravenous over oral therapy is unknown.

The haemolytic aspect of the anaemia has received attention from several groups of workers.[2 9 12 13] The classical signs of haemolysis are usually lacking; that is, the concentration of serum bilirubin is not raised, and the excretion of urobilinogen in the faeces is not often demonstrably increased,[6 7] while the reticulocyte count is usually less than 2%. These apparent anomalies are due in part to the fact that destruction of red cells is only slightly to moderately increased in rate, as a rule not more than three to four times the normal. The greatest increase in destruction of red cells is found in patients whose rheumatoid arthritis is active and progressive. Even so, the degree of excess destruction would not lead to anaemia unless the function of the marrow was impaired; W. H. Crosby and J. H. Akeroyd[14] calculated that healthy bone marrow was capable of a sixfold increase in haemopoiesis and haemoglobin formation. The cause of the shortened life of the red cells is obscure. There is no evidence of an immune mechanism for the haemolysis; the direct antiglobulin test is typically negative.

[1] Roy, L. M. H., Alexander, W. R. M., and Duthie, J. J. R., *Ann. rheum. Dis.*, 1955, **14**, 63.
[2] Alexander, W. R. M., Richmond, J., Roy, L. M. H., and Duthie, J. J. R., ibid., 1956, **15**, 12.
[3] Richmond, J. Gardner, D. L., Roy, L. M. H., and Duthie, J. J. R., ibid., 1956, **15**, 217.
[4] Nilsson, F., *Acta med. scand.*, 1948, suppl. 210.
[5] Ross, D. N., *Ann. rheum. Dis.*, 1950, **9**, 358.
[6] Jeffrey, M. R., ibid., 1952, **11**, 162.
[7] —— *Blood*, 1953, **8**, 502.
[8] Cartwright, G. E., and Wintrobe, M. M., *Advanc. intern. Med.*, 1952, **5**, 165.
[9] Freireich, E. J., Ross, J. F., Bayles, T. B., Emerson, C. P., and Finch, S. C., *Ann. rheum. Dis.*, 1954, **13**, 365.
[10] Sinclair, R. J. G., and Duthie, J. J. R., *Lancet*, 1949, **2**, 646.
[11] —— —— *British Medical Journal*, 1950, **2**, 1257.
[12] Bunim, J. J., *Ann. rheum. Dis.*, 1954, **13**, 365.
[13] McCrea, P. C., quoted by Mollison, P. L., *Blood Transfusion in Clinical Medicine*, 2nd ed., 1956, p. 168, Oxford.
[14] Crosby, W. H., and Akeroyd, J. H., *Amer. J. Med.*, 1952, **13**, 273.

The evidence for a defect in the function of the bone marrow in cases of rheumatoid arthritis has recently been summarized.[3] Microscopical studies on the marrow revealed no striking abnormalities. Iron, detected by the Prussian blue reaction or other chemical means, was present in the majority of marrows (69% of 61 samples) despite the hypochromia of the red cells in the peripheral blood. The cellularity of the marrow was generally normal, with the normoblast count ranging from 10.0 to 46.8%. In only 16 of the 61 marrow samples did the percentage of normoblasts exceed the normal range; this observation is in accord with the peripheral reticulocyte count being normal or only slightly raised. The only other abnormality was a slight excess of plasma cells in 35% of the cases. This could be correlated directly with the concentration of serum globulins. Duthie and his colleagues conclude,[3] in agreement with E. J. Freireich and co-workers,[9] that the anaemia cannot be explained by a deficiency of iron or by haemolysis. It is caused rather by the inability of the marrow to increase the rate of erythropoiesis above the normal level. This in some mysterious way is brought about by the patient's underlying disease.

QUINQUAGENARY OF THE M.I.A.

During the coming week the Medical Insurance Agency, which has its headquarters in B.M.A. House, is celebrating its fiftieth anniversary. Its genesis was a conversation during lunch between the editors of the *British Medical Journal* and of the *Lancet*, Dr. (later Sir) Dawson Williams and Dr. (later Sir) Squire Sprigge. They took notice of the size of the commission paid by an insurance office to the agent through whom a medical man had taken out a large life assurance policy. If such commissions could go to an agency which would arrange policies with most suitable terms for doctors, and if the insured could receive rebates and medical charities the surpluses left over, the benefits of such an enterprise would be kept within the medical profession: this was the idea Dawson Williams and Squire Sprigge had. Early in 1907 Dawson Williams accordingly persuaded the Journal and Finance Committee of the B.M.A. to consider a scheme which would enable doctors to insure against their risks under the Workmen's Compensation Act of 1906. The first meeting of the Insurance Committee met on March 7, 1907, and the minutes of this meeting were headed British Medical Association Medical Insurance Committee, with the first three words scored through with red ink. It was decided, in fact, that the Committee should be independent of the B.M.A., but the Council of the Association promised to assist in any way it could "the proposed scheme for an Insurance Agency." In November, 1913, the Committee changed its name to the Medical Insurance Agency, so that it should not be confounded with the committees under the National Insurance Act. For many years now it has been known familiarly to thousands of medical men simply as "The M.I.A."

Some idea of its growth and of its great donations to medical charities may be gathered from the following figures. The premiums collected by the agency in 1907 amounted to £1,400; in 1921 to £31,000; in 1936 to £280,000; and in 1956 to more than £2,000,000. In 1909 the Agency gave £47 to medical charities; in 1946, £4,980; and the annual donations since 1951 have been between £23,000 and £25,000. These remarkable results illustrate the growth of confidence of the medical profession in the M.I.A., and *pari passu* with this the increased efficiency of a management whose expertness in the field of insurance has been matched with great integrity in the conduct of business. Many distinguished medical men have acted as chairmen of the M.I.A., but it would not be invidious here to mention the impetus given to its development when Dr. Henry Robinson became Honorary Secretary of the M.I.A. in 1938—as he still is. He made it his first job to secure for the M.I.A. the services of a properly trained expert in insurance, and Mr. A. N. Dixon, now the general manager, was appointed in this capacity. The remarkable expansion of the business of the M.I.A., with its benefits to doctors and medical charities, owes much to these two men. From a single office in the B.M.A.'s premises in the Strand the agency has grown to departmental dimensions in B.M.A. House with branches in many English cities, in Scotland, Wales, and Eire. The two men from whose minds the idea of the M.I.A. sprang are commemorated by a Dawson Williams Scholarship for boys at Epsom College and a Squire Sprigge Fund for orphan girls, both established and endowed by the M.I.A. The M.I.A. to-day is a magnificent monument to the practical wisdom of two medical editors.

CONGENITAL INDIFFERENCE TO PAIN

An otherwise normal person may have a congenital indifference to pain. The condition may pass unrecognized for many years, parents simply congratulating themselves on an unusually stoical child. In other cases some accident which ought to cause pain may occur early in life and the child's behaviour be so unexpected as to lead to the diagnosis. Tests to a full range of painful stimuli will then reveal that they are not appreciated as painful. In some cases some slight element of pain may be experienced, as E. C. O. Jewesbury[1] and others have found, but appreciation is so slight as to be in striking

contrast to that of a normal individual. In equally great contrast is the almost normal appreciation of sharp and blunt and hot and cold sensations—the primary elements of classical "spinothalamic" sensation. Once the condition is recognized, there is usually plenty of confirmatory evidence that it has been present for some time. Thus many and extensive scars, old fractures, often ununited and malunited, or traumatic arthropathies, even to the extent of a fully developed Charcot joint, may be present. In the majority of such cases other modes of sensation are entirely normal, and intelligence is well preserved. Behaviour is altered only in so far as reaction to pain is concerned.

There is another and larger group of individuals who also show indifference to pain. The condition is here part of a more general mental defect, and will fairly commonly be found if looked for in mental deficiency hospitals. The disadvantages and slight advantages of the condition are well illustrated in this setting. The diagnosis of severe disease can be made much more difficult by the absence of reaction to pain, and the onset of major catastrophes may pass unnoticed. On the other hand, the patient bears without apprehension a course of treatment entailing frequent painful injections. In this group the unusual reaction to pain is rightly regarded as dependent on the known structural abnormalities of the central nervous system which accompany mental defect. But in the first group, for which the term congenital indifference to pain should be reserved, the problem of what neurological deficit exists is a fascinating and unsolved one. What evidence there is does not suggest any peripheral abnormality.

At the central end of the pain mechanism two conditions have some similarities to this. The lesion of frontal leucotomy is sometimes used to produce an indifference to pain when it is severe and caused by irremediable disease such as carcinomatosis. But here the picture differs in an important respect. After leucotomy the apprehension of pain to come—so important a part of the suffering in chronic recurrent pain—is abolished and the clinical benefit may be enormous. Yet the immediate reaction to pain may not be reduced; indeed, it may sometimes be enhanced by the uninhibited behaviour that follows this operation. The other condition which may provide a clue is one described by P. Schilder and E. Stengel[2] as "asymbolia for pain." In this a condition of indifference to pain occurs in adult life, probably as a result of lesions in the posterior parietal region of the dominant hemisphere, and is commonly associated with dysphasic difficulties. A congenital defect in the same cortical area could account for the cases with an innate indifference. This argument is strengthened by the occasional report of other agnosias in association with congenital indifference to pain. For the time being this is perhaps the most satisfactory explanation, and we may tentatively regard the condition as one form of limited congenital agnosia. This is to some extent simply cloaking our ignorance in fine language, since the detailed cerebral abnormalities (anatomical and physiological) in all these conditions are largely unknown. While they remain a matter for further investigation, the removal of all pain experience from an individual's life suggests interesting avenues of speculation. In the words of Macdonald Critchley, who with his flair for the neurological borderland has several times discussed this condition,[3-5] "the subject may well prove to be richer and still more rewarding to the psychologist and also to the philosopher."

[1] Jewesbury, E. C. O., *Brain*, 1951, **74**, 336.
[2] Schilder, P., and Stengel, E., *Arch. Neurol. Psychiat.* (*Chicago*), 1931, **25**, 598.
[3] Critchley, M., *British Medical Journal*, 1934, **2**, 891.
[4] —— *Bristol med.-chir. J.*, 1935, **52**, 191.
[5] —— *Ann. intern. Med.*, 1956, **45**, 737.

DANGERS OF CHICKEN-POX

Chicken-pox is one of the most benign diseases. It seldom provides interest for the clinician or the epidemiologist, nor stimulus to the specialist in preventive medicine. Children are expected to contract the infection before or during their schooldays, and generally there seems little reason to prevent this from happening. Complications are uncommon, often taking the form of skin sepsis or respiratory infections as a result of secondary invasion by staphylococci or streptococci, but they are seldom serious. Neurological lesions such as encephalitis, myelitis, and polyneuritis are rarely encountered but carry a mortality of 10%, coma and convulsions being the two signs of most serious omen.[1]

Primary chicken-pox pneumonia has been described on few occasions, but is fully discussed in two recent papers,[2 3] one of which gives details of 16 cases seen in Boston, Massachusetts. The condition is an interesting one and could easily be overlooked or ascribed to secondary pneumonia. In nearly all cases the rash is widespread if not actually confluent, and many vesicles are present in the mouth and pharynx. Within five days of the appearance of the rash the patient, usually an adult, develops a distressing cough productive of a little blood-streaked sputum, and may be critically ill. The temperature, which is high at the onset, settles by lysis after one or two weeks. Antibiotics do not influence the course of the disease but probably help to prevent secondary infection. The radiological changes in the lungs are remarkably typical. There are widespread nodular shadows, rather larger than those seen in miliary tuberculosis, superimposed on increased lung markings. Rapid changes can be followed in serial radiographs, some lesions resolving while new ones appear. There is no lobular consolidation or collapse. Resolution in most cases is complete within two weeks. In general the patients with the severest skin lesions develop the most marked radiological changes, but even then the physical signs in the lungs are few. There were no deaths in the Boston series, but the authors refer to reports of four fatal cases in which the histological appearances were in keeping with a virus infection. Similar lung changes associated with widespread visceral lesions have also been found in newborn infants when the infection has started *in utero*.[4]

There has recently been evidence, also from Boston,

[1] Miller, H. G., Stanton, J. B., and Gibbons, J. L., *Quart. J. Med.*, 1956, **25**, 427.
[2] Tan, D. Y. M., Kaufman, S. A., and Levene, G., *Amer. J. Roentgenol.*, 1956, **76**, 527.
[3] Southard, M. E., ibid., 1956, **76**, 533.
[4] Lucchesi, P. F., La Boccetta, A. C., and Peale, A. R., *Amer. J. Dis. Child.*, 1947, **73**, 44.
[5] Haggerty, R. J., and Eley, R. C., *Pediatrics*, 1956, **18**, 160.

that varicella may become a diffuse fulminating infection in a patient who is receiving cortisone.[5] After seeing two such cases in two years R. J. Haggerty and R. C. Eley suspected something more than a coincidence and sought further information. Inquiries directed to sixty-five physicians in the United States, Canada, and England brought to light ten similar fatalities. The ages of children affected ranged from eleven months to eight years, and they had received cortisone for periods of a few days to two months. Other patients receiving cortisone had severe skin lesions, or an atypical rash making early diagnosis difficult. Although varicella sometimes takes an uneventful course in spite of the administration of cortisone the Americans now advise the rapid withdrawal of such treatment from susceptible children who have been exposed to the infection. These observations may be difficult to explain but should be widely known, for the use of cortisone is increasing and chicken-pox is ubiquitous.

PYROGENS AND FEVER

The process by which fever is produced has puzzled clinicians since the earliest days of medicine. With the advent of the bacteriological era it soon became apparent that fever was usually the result of microbial infection. But the frequency with which a febrile response is associated with infarction, internal haemorrhage, and trauma, even when uncomplicated by microbial infection, emphasizes that infection is by no means the whole story. The parenteral introduction into the body of warm-blooded animals not only of bacteria, dead or alive, but of almost any foreign protein is nearly always followed by a rise in body temperature. A single explanation of these diverse observations postulates that the ultimate stimulus to the heat-regulating centres in the hypothalamus is an endogenous substance resulting from cellular or tissue injury.

V. Menkin, who has done so much to formulate a dynamic concept of inflammation, has isolated from sterile inflammatory exudates a series of substances capable of eliciting more or less separately the various components of the inflammatory reaction, including the development of fever.[1] To the substance so isolated, which causes a distinct rise of temperature when injected into experimental animals, he has given the name pyrexin. More recently two non-protein substances of bacterial origin have been widely used in the study of experimentally induced fever. These are the polysaccharide from *Serratia marcescens*[2] and a lipopolysaccharide from *S. abortus equi*.[3] The relationship between these substances and pyrexin is therefore of considerable interest, and Menkin himself has done much to clarify it.[4] Not only is the intravenous injection of one of these substances followed within an hour or so by a rise in temperature of 2–3°F. (1–2° C.), but the serum of the recipient simultaneously acquires the property of inducing a similar febrile response when injected into another animal. The serum of animals injected with pyrexin, however, does not acquire this capacity to induce a further febrile response in another recipient. Menkin has therefore suggested, on the basis of further experiments, that these pyrogens of bacterial origin do not themselves directly influence the thermoregulating centres but that an interaction in some way with the euglobulin of the plasma results in the formation of a pyrexin-like material. It is then this material in the blood stream that directly influences the regulating centres of the animal itself and can in addition similarly affect those centres in another animal when passively transferred. Much the same conclusion was reached by E. Atkins and W. B. Wood[5] as a result of their work on the pathogenesis of the fever produced in rabbits by the injection of typhoid vaccine. Their results strongly support the view that the bacterial pyrogen excites in some way the formation of an endogenous pyrogen. Thus, if blood is withdrawn from rabbits 5 minutes and 120 minutes after the injection of the vaccine and injected into other rabbits, then the febrile response to the 120-minute sample is significantly quicker than the response to the 5-minute sample. Presumably the increased latent period with the earlier sample represents the time required for the formation of the endogenous agent.

While Menkin regards the pyrogen in sterile inflammatory exudates as arising in some way, possibly by proteolysis, from plasma euglobulin, I. L. Bennett and P. B. Beeson[6] have produced considerable evidence that in rabbits a main source is the polymorphonuclear leucocyte. Of the many types of cell extract studied by them only extracts of these leucocytes were active. The properties of this pyrogen differ in many ways from those of pyrexin, which they suggest might well be nothing more than the result of bacterial contamination of Menkin's preparations. This contention has been convincingly rebutted in Menkin's most recent paper.[4]

Some at least of the considerable differences of opinion held by workers in this field might be due to the different methods of assessing a febrile response. Individual responses to a fixed dose of pyrogen vary not only in the height of the fever attained but in its duration. In a well-controlled experiment to determine the best method of assessing these responses F. Wendt and colleagues[7] found no correlation between the quantity of pyrogen and the duration of the subsequent fever, but a definite correlation with the maximum height of the fever. A still better correlation was found between the dose and the area under the time–temperature response curve. This curve is simply obtained by plotting the temperature at regular intervals after the injection of the pyrogen. The coefficient of correlation between the dose and this area is 0.817, which is significantly better than the figure of 0.501 obtained for the relationship between dose and maximum height of fever. A further point of great interest in the work of Wendt and his colleagues is that it is carried out entirely on human subjects. From the experimentalist's point of view it is most gratifying to find how similar are the responses of man and animals.

[1] Menkin, V., *New Concepts of Inflammation*, 1950, Springfield, Ill.
[2] Shear, M. J., *J. nat. Cancer Inst.*, 1944, **4**, 461.
[3] Westphal, O., and Luderitz, O., *Angew. Chem.*, 1954, **66**, 407.
[4] Menkin, V., *J. Lab. clin. Med.*, 1955, **46**, 423.
[5] Atkins, E., and Wood, W. B., *J. exp. Med.*, 1955, **101**, 519.
[6] Bennett, I. L., and Beeson, P. B., *J. exp. Med.*, 1953, **98**, 477 and 493.
[7] Wendt, F., Snell, E. S., Goodale, F., Jr., and Cranston, W. L., *Clin. Sci.*, 1956, **15**, 405.

UNDERWRITING SUBSTANDARD LIVES

MODERN LIFE ASSURANCE PRACTICE

The revision of underwriting standards necessitated by medical progress was the theme of Dr. K. SHIRLEY SMITH'S presidential address to the Assurance Medical Society on February 6. Speaking as a cardiologist, he dealt particularly with the creation of "substandard pools" as a means of extending life cover to those with certain well-defined types of disability, such as diabetes, hypertension, and coronary disease, without at the same time financially penalizing the "first-class life." Of all proposals for life assurance, he said, about 90% were accepted at ordinary rates, 3–4% rejected outright or postponed, and 6–7% accepted as substandard lives. In Britain in 1951 assurances on substandard lives totalled £230m.—a substantial volume of business.

How should an impaired life be translated into terms for a policy? There were many answers. In Britain the usual practice was to assess each proposer individually and to express the extra risk in terms of years added to his age: rating up by five years, for instance, corresponded to an extra mortality of about 9% when the age of entry was 30 and to about 34% when it was 50. But, unless the extra mortality due to the proposer's disability ran exactly parallel with the general mortality curve, this method of rating was unsatisfactory. Another way was to accept substandard lives in large groups or pools. There was nothing new about this. The first of the big substandard pools—for diabetics—was started in 1949 by the Mercantile and General Reinsurance Company. Since then a pool had been formed for hypertensives, which had been going for about four years, and now a coronary pool had just been begun. The premiums for those in these substandard pools were weighted so as to discount the effect of their inclusion on the with-profit policies of first-class lives.

The Coronary Pool

Into the coronary pool were accepted those with angina insufficiently severe to prevent their working, and those who had had a single coronary thrombosis. Any additional impairment excluded them.

Coronary disease was becoming a particularly acute problem for assurance companies. An increasing number of men in their sixties and seventies were seeking life cover, and often for substantial sums—in itself a factor known from mortality statistics to be associated with a higher than average mortality. A further difficulty was the importance of the history—and therefore of the proposer's frankness—in assessing a coronary case. Estimates of the long-term prognosis in angina had become increasingly optimistic during the past three decades. Last year P. D. White and his colleagues[1] in Boston had published the results of a 25-year follow-up of patients with angina, finding an average survival from onset of nearly 10 years. In those who survived longest hypertension, cardiac infarction, cardiac enlargement, and abnormal electrocardiograms were infrequent findings. During the period of follow-up the excess annual mortality of this anginal group—7% for the men and 5.3% for the women—had remained constant, and there was no difference between a younger and an older group of patients in this respect.

The Boston team had also completed a similar follow-up of 200 patients with cardiac infarction.[2] Thirty-eight had died within four weeks of the initial attack. Of the remaining 162 about one-half had survived for five years and one-third for 10 years; only 14% lived on for 15 years and 5% for 20 years. The best index for long-term prognosis was the degree of clinical recovery from the attack: when this was complete 56% were alive after 10 years—nearly double the average survival. In another important follow-up of 461 cases of cardiac infarction[3] two-thirds had survived for more than five years and nearly half for more than 10 years. It was on these findings that the coronary pool was based. The other principle on which the pool was founded was the recently established fact that the long-term prognosis depended on the severity of the initial attack. Another study from Boston, of 100 patients under 40 years of age with cardiac infarction, had shown that 37 of their fathers had died from coronary attacks compared with only 18 in a matched control group, and that a heavy muscular build rather than obesity was predisposing. More notice, therefore, said Dr. Shirley Smith, should be taken of family history and build, and probably also of heavy smoking.

Outlook in Other Disabilities

Surveys in both Britain and America had revealed a striking fall in the incidence of rheumatic fever: first attacks were now only one-third as frequent as twenty years ago. There had been a corresponding drop in the mortality of children from rheumatic heart disease, but the rate for adults had not fallen. The view was now that if acute rheumatism was going to cause heart disease definite physical signs would become apparent within five years in almost every instance.

Cancer was an increasing menace. In his own recent review of 735 claims cancer had accounted for between 11 and 12%; and as a cause of claims within the first two or three years of life assurance malignant disease had been said to rank second only to road accidents. No relaxation of underwriting standards was possible here, and care was still needed if precancerous lesions such as duct papilloma of the breast or polyposis of the colon were found.

On the other side of the picture, the decline in mortality from respiratory tuberculosis was one of the most arresting developments in public health. It was not so very long ago that any personal history of the disease automatically disqualified a proposer from life assurance. Nowadays many medical officers would advise acceptance if the proposer had been symptom-free and the disease clinically inactive for five years—provided it had never been extensive. A history of pleurisy with effusion within the past five years, however, still called for a most careful appraisal.

The general relaxation of underwriting standards in many cases of peptic ulceration reflected the improvements in treatment of both the disease itself and its main complication, gastro-duodenal haemorrhage. However, gastric ulcer was still a difficult disease to assess, as freedom from symptoms did not necessarily mean cure. In spite of the increasing tendency to treat peptic ulceration surgically, the Society of Actuaries' "impairment study" in 1951 had shown a significantly lower mortality in the medically treated cases. No doubt this was due to a higher proportion of the more severe cases being included among those coming to surgery.

The widening scope of life assurance, and especially the group systems, Dr. Shirley Smith said in conclusion, not only represented a great advantage to the community but also brought the life assurance offices increasing credit.

The Common Cold Research Unit at Harvard Hospital, Salisbury, has received over 900 inquiries from prospective volunteers as a result of its appeal in January. Of the total, 844 were from people living in England, 323 of these being from London and the Home Counties. Outside this area, the largest number of inquiries, 55, came from Yorkshire. Scotland produced 35 people who showed interest, Wales 23, and Ireland only 3—one fewer, in fact, than India, from which four letters were received. One person wrote from France. Those volunteers who go to the hospital have their fares paid up to a maximum of £3, and 3s. a day pocket money for the 10 days they spend at the Unit. Not more than half the volunteers are likely to catch cold during their visit.

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[1] Richards, D. W., Bland, E. F., and White, P. D., *J. chron. Dis.*, 1956, **4**, 423.
[2] —— —— —— ibid., 1956, **4**, 415.
[3] Cole, D. R., Singian, E. B., and Katz, L. N., *Circulation*, 1954, **9**, 321.

MEDICINE BY THE PERSIAN GULF

NEW HOSPITAL IN QATAR

On February 5 the Shaikh of Qatar, His Excellency SHAIKH ALI BIN ABDULLA THANI, opened what one experienced British observer describes as perhaps the most luxurious hospital to be found in any country. The hospital is the General Hospital at Doha, the capital of the Shaikhdom. Qatar is an oil-bearing peninsula projecting into the Persian Gulf, about 8,000 square miles (20,700 square km.) in extent, with a population of about 30,000. The oil is worked by a British company under a concession granted by the Shaikh.

Luxurious Design

The hospital, whose design was the subject of an R.I.B.A. competition some years ago, cost about £3m. to build. It has 130 beds, 44 of which are in single-bed wards. The remainder are in two-, four-, and six-bed wards. Each single-bed ward has a large verandah with a bathroom and lavatory; altogether there are 128 lavatories in the hospital. There is an isolation block, an orthopaedic wing, and a paediatric unit. The five operating theatres are equipped with the most modern fittings and surgical instruments. They are supplied with filtered dust-free sterile air from a special heating, cooling, and humidifying plant, which is controlled electronically from a switchboard in the theatre, and there is piped oxygen and nitrous oxide to the wards and theatres. First-class diagnostic and therapeutic *x*-ray equipment has been installed. The physiotherapy department is lavishly equipped. The pathological department comprises laboratories for biochemistry, haematology, serology, and histology. The pharmacy is equipped with electric mixers and machines for making ampoules and tablets. A small Arabic and English press prints hospital literature. There is a signalling system for summoning doctors and staff. The kitchen and laundry are exceedingly well provided, and there is even a piped supply of chilled water running everywhere in the building. The main A.C. plant to the wards is claimed to be the largest in the Middle East.

At the opening ceremony the B.M.A. was represented by Dr. IAN GRANT, who was visiting Qatar as a guest of the Government. Distinguished medical representatives had also come from Saudi Arabia; the medical faculties of Bagdad, Cairo, and Damascus; from the American University at Beirut; from Kuwait, Bahrain, and the Lebanon. And there were also the medical officers of the local oil companies.

Health in a Desert Community

The Shaikh of Qatar deems himself the Father of his People, and regards it as his duty to promote a very high standard of health in his country. Already almost 100% of the population have been vaccinated. All the children have had B.C.G. vaccination, and mass miniature radiography of the whole population is being done; so far over 6,000 persons have been *x*-rayed. The incidence of tuberculosis in this sample was 12 per 1,000. At present all active cases of tuberculosis amongst the native population are sent to a sanatorium in the Lebanon, but plans are afoot to build a 60-bed sanatorium in Doha. If foreign nationals develop the disease they are given 100 rupees and a free passage to their own homes. In all this preventive work, and much else, the head of the State medical department, Colonel A. E. KINGSTON, has played an outstanding part. In addition, during the last five years he has not only supervised the building of the new hospital but has undertaken the administrative and much of the routine medical and surgical work at the old hospital it replaces. At the new hospital there are at present a consultant physician (Dr. C. ELGOOD) and a consultant surgeon (Mr. R. D. EWING). Additional staff is required, however, and there will be vacancies for well-qualified specialists in ophthalmology, anaesthetics, pathology, E.N.T., radiology, and gynaecology.

RADIATION HAZARD FROM DIAGNOSTIC RADIOLOGY

U.N. COMMITTEE SEEKS FACTS

The United Nations' scientific committee on the effects of atomic radiation has issued a statement headed "The Responsibilities of the Medical Profession in the Use of *X*-Rays and Other Ionizing Radiations." In it the committee asks for information from the profession in each country on how the medical hazards might be minimized, and for an estimate of the total radiation to the gonads received by the population before and during the reproductive age. Where estimates have been made, states the committee, diagnostic radiology appears to account for "the greatest gonad irradiation of the population." The committee, which was established by the General Assembly in December, 1955, consists of scientific delegates from fifteen nations, including the United Kingdom, Australia, Canada, India, the United States, and Russia.

Limiting the Gonad Dose

Discussing permissible levels of irradiation for the whole population, the committee states: "It is considered prudent to limit the average dose to germinal tissues from artificial sources to the order of magnitude of that received from all natural sources." In estimating this dose, the relevant dose is defined as the "mean gonad irradiation among the population as a whole up to the end of the average reproductive period." In Sweden and the United States, says the committee, genetic irradiation from diagnostic radiology is known to be at least equal to that from natural sources, while in Britain a minimum figure of 22% has been given. It is clear, therefore, even without more exact data, continues the statement, that this type of exposure can be substantial in countries with extensive medical facilities.

The committee accordingly asks radiologists to suggest ways of reducing such exposure. In particular the committee would like to know the extent to which attention to the following points might be expected to reduce irradiation of the gonads: (*a*) Better design or shielding of equipment; (*b*) fuller training of those carrying out radiography and fluoroscopy; (*c*) local shielding of the gonads; (*d*) the use of radiography rather than fluoroscopy when the information given would be equally satisfactory; (*e*) avoidance, by better administrative arrangements, of unnecessary repetition of the same examination; (*f*) studies of various medical conditions such as peptic ulcer to define the exact circumstances in which a radiological examination really assists in treatment or prognosis. In Britain the committee recently appointed under Lord Adrian's chairmanship to review radiological practice (see *Journal*, February 16, p. 413) is expected shortly to be sending a questionary on these and kindred matters to departments of radiology and radiotherapy and to others concerned. This body will receive evidence from British radiologists. Its secretariat is at the Ministry of Health, Savile Row, London, W.1.

Monthly meetings are held at the Royal Northern Hospital, London, between the hospital staff and family doctors. Many day-to-day medical difficulties have been discussed, but recently there was a more general debate on "The Medical Out-patient Service and the Family Doctor's Problems." Most of those present emphasized the importance of the exchange of careful and adequate letters between general practitioner and consultant. The former could sometimes provide more information about the home situation, previous investigations, and drugs given, while those from hospitals were often delayed in arrival and on occasion a trifle inhuman or obscure. Follow-up letters, both from the family doctors and from hospital, were to be encouraged, and the value to the G.P. of negative findings at hospital was also stressed.

Reports of Societies

CORONARY THROMBOSIS

PET THEORIES AND AWKWARD FACTS

The reason for the present high mortality in Britain from coronary disease is still obscure. Speaking as an epidemiologist before the Manchester Medical Society recently, Dr. J. N. MORRIS could find no proof of the view that fats are the main cause; and he was at some pains to point out that neither the incidence nor necessarily the aetiology of coronary atheroma runs parallel to those of ischaemic heart disease. Dr. Morris is director of the Medical Research Council's social medicine research unit. In Britain before the first world war coronary atheroma was apparently rife but ischaemic heart disease less common than now, he said. An increase of massive thrombosis in atheromatous coronary arteries seemed to be one element in the modern transformation. Moreover, it was possible to distinguish occlusive from merely mural coronary artery disease—thus in deaths from peptic ulcer, in contrast with what happened in hypertension, there seemed to be a selective increase of occlusive disease—and this might provide another approach in the search for environmental factors.

A nation-wide survey of necropsies in middle-aged males, in which 200 departments of pathology had co-operated, had shown an excess of ischaemic myocardial fibrosis in those with light occupations dying of cancer, injuries, etc. This excess was most noticeable in the case of solitary scars of large healed infarcts, a finding which might link up with the previous observation of an excess of "sudden deaths" and other rapidly fatal ischaemic heart disease in sedentary workers such as bus drivers and clerks.

Doubts about Dietary Fats

Discussing the main social pathology now postulated—that Western man was eating himself into the disease—Dr. Morris regretted that he could do no more than share his own confusions. What might be called the "appeal to epidemiology" was persistently refusing to confirm hypotheses of a single or simple dietary aetiology for ischaemic heart disease. In the present climate of opinion he found such a negative role exceedingly uncomfortable. But it was impossible to match in any logical way what was known about mortality from coronary heart disease with the known trends in fat consumption. Thus, the marked variations in mortality among Western countries with similar high fat-intakes disposed of any story that total fat consumption was the critical factor. Changes in the consumption of animal fat in Britain during the present century could be related to changes in the incidence of coronary atheroma as recorded at the London Hospital, but they showed no relation to the Registrar-General's figures of mortality from coronary heart disease. The trend of consumption of butter-fat in Britain showed less than no relation; the steep increase in coronary deaths since 1943 was only one illustration of this.

Changes in the intake of vegetable fats resembled the mortality experience better, and those in hydrogenated fat much better, except that the distribution of coronary mortality by social classes disagreed with the class pattern of margarine intake. International experience was even more contradictory: Norwegians, who had a very high consumption of margarine, seemed to have far less fatal "coronary thrombosis" than New Zealanders, who ate very little. Perhaps the fish the Norwegians ate protected them, but this did not seem to help Aberdeen, which registered twice the coronary death rate of Oslo. In terms of total essential fatty acids the only data available for Britain gave no support to the hypothesis that the population was now suffering from an absolute or relative deficiency of these nutrients, and international comparison again showed anything but a homogeneous picture. Perhaps we were still dealing with rather a dim reflection of the true dietary causes; perhaps several dietary factors were involved; perhaps diet was only one of several causes of ischaemic heart disease. More and better statistics of disease and food trends were urgently needed, said Dr. Morris in conclusion. It seemed to him a hopeful sign that the World Health Organization had now entered this field.

PSYCHOLOGICAL PRECIPITATION OF EPILEPSY IN CHILDREN

[FROM A SPECIAL CORRESPONDENT]

On February 14 the Child Psychiatry Section of the Royal Medico-Psychological Association, under its chairman Dr. K. CAMERON, discussed the role of psychological factors in the precipitation of epileptic attacks. Paediatricians were specially invited, and two of them, Dr. J. P. M. Tizard (Institute of Child Health) and Dr. Robert Shanks (Glasgow), opened the discussion with Dr. D. A. Pond (Maudsley Hospital).

Petit Mal and Temporal-lobe Epilepsy

Dr. POND referred particularly to two groups of children—those with petit mal and those with temporal-lobe attacks. The former type of attack could be precipitated almost instantaneously, he said, by certain disturbing situations or even by asking emotionally charged questions during an interview. The attack seemed to repress the unpleasant emotion from consciousness and sometimes even the question causing it. Of course, not all petit-mal attacks were so produced, and other more directly physical factors such as overbreathing, intermittent photic stimulation, and occasionally noise were usually more important. A rare condition of particular interest was that in which the child apparently discovered for itself the epileptogenic effect of photic stimulation, which he would then simulate by flickering his fingers across his eyes while staring at the sun or a bright light, thus producing brief petit-mal attacks. All of the opening speakers had seen one or two such cases and all stressed the compulsive nature of the act in these children. Dr. Pond's case, which had received three months' in-patient psychotherapy, had shown the same passivity and stubbornness he had previously described as characteristic of many children with petit mal.

By contrast with petit mal, the psychogenic precipitation of temporal-lobe attacks was never so instantaneous, but increase of emotional tension over days or weeks often greatly added to the number of attacks. This was more easily appreciated when children were discharged from hospital to emotionally disturbed homes than from retrospective histories from their parents.

Dr. Pond then turned to the mechanism of psychogenic precipitation, and mentioned briefly the older theories of the possible influence of emotion on the cerebrovascular system, the autonomic nervous system, and the endocrine glands. None of these theories could satisfactorily explain the instantaneous precipitation of petit mal. During the attack the abnormal activity was bilaterally synchronous and probably related to the normal symmetrical activity of waking and sleeping that was controlled by the so-called centrencephalic system. This similarity, he thought, helped one to understand the mechanism of the seizures. But to explain their precipitation by emotion it was necessary to postulate a further process akin to conditioning. Temporal-lobe seizures originated, it seemed, in those parts of the cerebral cortex where was to be found the highest level "representation" of the somatic concomitants of emotion. But here again the mechanism of the seizures was better understood than their psychological triggering. The stimulus appeared to be a build-up of emotional tension, and sometimes the stimulus was quite specific, as in those cases of epilepsy where the attacks were provoked by particular pieces of music.

Breath-holding Attacks

Dr. J. P. M. TIZARD first spoke of the breath-holding spells of infants. These were certainly precipitated by frustration,

he said, and occurred in children who seemed unusually bad-tempered and irritable. Some of the spells ended in a brief tonic-clonic attack, presumably as a result of anoxia from the breath-holding. But a small proportion of such babies developed epileptic attacks in later years. He thought that fright was the most important emotion precipitating petit-mal attacks. One of his children with compulsive autophotic stimulation had been seen by Dr. D. W. WINNICOTT, who made the interesting suggestion that the compulsive flickering was an attempt by the child to bring the spontaneous attacks under some sort of voluntary control. Dr. Tizard went on to say that he thought the psychogenic precipitation of major seizures was much less obvious, since there was nearly always an interval of hours between the fit and the preceding emotional upset. In these cases the emotion usually seemed to be related to anger and rage rather than fright. He also wondered if the fact of major seizures being commoner by night than by day was related to night terrors acting as precipitating factors.

Dr. ROBERT SHANKS also thought that major seizures were precipitated, if at all by emotions, only by fear and rage, whereas anxiety produced petit mal. He contrasted the older view of epilepsy as a psychological illness with typical personality changes with the current view that all fits were caused by lesions, some of which, if in the temporal lobe, also produced personality change. Breath-holding produced major seizures by anoxia, whereas the apparently opposite state of overbreathing produced petit mal. Both paediatricians agreed with Dr. Pond that the frequency of attacks of petit mal depended closely on the patient's emotional state.

Television and Photic Stimulation

In the ensuing discussion several speakers expressed similar views supported by case histories. Dr. MARGARET LOWENFELD (London) made the interesting point that sometimes one had to choose between controlling the patient's fits, or leaving him psychologically more normal and alert though having seizures. Dr. R. W. TIBBETTS (Birmingham) and others had seen cases of epilepsy, both major and minor, apparently precipitated by watching television, but these might be a special instance of intermittent photic stimulation.

Your correspondent was impressed by the unanimity of paediatricians and psychiatrists on the facts of the psychogenic precipitation of seizures, but much remains to be learnt about the underlying mechanisms, both physiological and psychological.

Further details have now been released about the research laboratories for medical physics and urology at Leeds General Infirmary, towards the cost of whose building the Wellcome Trust has made a grant of up to £60,000 (see *Journal*, February 2, p. 295). The total cost of the laboratories and their equipment is put at about £120,000, and both the United Leeds Hospitals Board and Leeds University will be contributing substantially to the extra cost. The urological unit was formed in 1950, under Mr. L. N. PYRAH, who was appointed to a personal chair in urological surgery last October, with departments at the General Infirmary and St. James's Hospital. Last year the Medical Research Council accepted major responsibility for the unit's research programme and assisted in creating an associated clinical research unit with Professor Pyrah as honorary director and Dr. F. M. PARSONS as assistant director. The university department of medical physics was also established in 1950, Dr. F. W. SPIERS being appointed to the chair, and increasingly its clinical and research programmes have been associated with those of the urological unit. In addition, the department is carrying out research on electromyography and electroencephalography, the application of electronic scanning to radiology, the measurement of whole-body radioactivity for such purposes as the estimation of occupational hazard, and the physical aspects of x-ray and radium therapy.

Correspondence

Because of heavy pressure on our space, correspondents are asked to keep their letters short.

Vagotomy for Duodenal Ulceration

SIR,—Restoring gastric digestion and bodily nutrition to as near a normal state as possible at the minimum risk is our aim in the surgery of duodenal ulcer. Analyses of follow-up records, discussions, and correspondence, such as have appeared recently, continue to contribute to this end, but there is yet no general acceptance of one operation which so fulfils our criteria that standardization seems in sight. I would like space in your columns to endorse one point of view and hope that something useful may be added.

Since Dr. George Crile told me some five years ago of their large and encouraging experience with gastro-jejunostomy and vagotomy at Cleveland, I have used this procedure increasingly until now it is routine, and up to date there have been no exceptions to the content of our patients. Dr. Crile said, if I remember him rightly, that up to 7% might develop marginal ulceration, and these cases were cured by gastrectomy, still leaving the scales weighted heavily in favour of the less mutilating operation. He also made the point that there was a definite economic advantage, since these patients were out of hospital and back to work in a shorter time. This, too, has been our experience—most are out of hospital within ten days and back to work within the month. Nutrition is unaffected and post-prandial discomforts are rare. In all hands it is a safer operation, even in these days of safe gastrectomy. In the very young patient, on whom most surgeons are reluctant to perform a major reaction, it makes the decision less onerous. Results are excellent in women, whereas they do not seem to take kindly to gastrectomy for duodenal ulcer. Incidentally this operation, in addition to apposition of the crura, gives satisfactory symptomatic relief in the hiatal-hernia syndome and is particularly applicable if a duodenal ulcer is present. Last, and of course least, but not unimportant, is that vagal section and short circuit is a much less time-consuming technique, and this factor cannot be regarded of small significance when the waiting time for these patients in some hospitals is over three years.

These advantages are countered only by the threat of marginal ulceration. However, the published incidence in this country has shown a remarkable variation, and the highest figure quoted is difficult to reconcile with personal experience. It would seem that this operation deserves a more extensive trial under scrutiny. I believe myself that to-day a duodenal ulcer patient is offered his best chance by finding a keen physician, who uses a reluctant surgeon, who in turn uses gastro-jejunostomy and vagotomy as his first line in surgical treatment.

As to other procedures, let it be said categorically that the Billroth I resection and vagotomy achieves results as good, in terms of function, morbidity, and mortality rate, as the best by any other operation. The factor which militates against its general use, and which has not been sufficiently emphasized, is that exceptional skill and experience are required if it is employed in all cases. The modern Polya has been castigated for its occasional functional shortcomings in spite of a well-formed valve. A modification which embodies Mr. Capper's recommendations and does seem to mitigate these troubles is to use the original Billroth II, in which the stomach remnant is closed: the distal end is then brought across to the right side and sutured in the region of the right free margin of the lesser omentum so that the axis of the gastric remnant approximates to that of the normal stomach. A short loop, small stoma, iso-peristaltic gastro-jejunostomy is then added.—I am, etc.,

London, W.1. D. LANG STEVENSON.

Vaginitis

SIR,—The clinical trials of Dr. R. F. Jennison and Dr. J. D. Llywelyn-Jones (*Journal*, January 19, p. 145) have shown that a 1% watery solution of gentian violet applied to the vagina was not effective in monilial vaginitis. In my experience the inefficacy is probably due to the acid reaction of the vagina: an acid reaction is known to decrease the permeability of living bacteria and fungi for basic substances.

Recently I advanced a general principle of pharmacodynamics. The efficacy of any drug or chemical will be increased or decreased by diminishing or increasing respectively its solubility in the solvent or vehicle in which it is applied.[1] Based on this principle, a very effective fungicidal paint was evolved, consisting of an alcoholic solution of methyl violet (1–2%), which is diluted before use with an equal part of 0.1% solution of bicarbonate. I found this paint to give rapid curative results, apparently without recurrences, in athlete's foot, pityriasis versicolor (axillaris), and in chronic subungual fungus infections. For monilial vaginitis I would suggest the use of a 0.1–0.5% alcoholic solution of methyl violet to be applied immediately after rinsing the vagina thoroughly with a weak solution of $NaHCO_3$. I am confident that this method will give highly satisfactory therapeutic results.—I am, etc.,

London, N.W.11. M. G. GOOD.

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SIR,—In the annotation on vaginitis (*Journal*, January 19, p. 155) mention is made of the difficulty of treating vaginitis due to *Candida albicans*, because of the rapidly developing resistance of this organism to the various antifungal agents: "The difficulty with all these preparations lies not in finding an effective fungicide . . . but in overcoming the drug resistance which the organisms acquire with such rapidity and persistence." While this may be true of chemotherapeutic agents, although I am not aware of any work showing actual drug resistance, this has not been the case with nystatin. Some of the cases treated by Dr. J. D. Llywelyn-Jones and myself and reported in the same issue (p. 145) did recur after treatment, but the strain of *C. albicans* isolated at the time of the recurrence was still sensitive by laboratory tests to nystatin, and the recurrence should most probably be called a reinfection. During the last year in the St. Mary's Hospitals we have tested more than 200 strains of *C. albicans*, including those from recurrent cases of monilial vaginitis, and have so far found no change in the original sensitivity of *C. albicans* strains to nystatin. This has always seemed to us a particular asset of nystatin treatment.

Since the publication of the series reported in your issue of January 19 we have in fact increased the course of local nystatin treatment to 14 days, but have not used oral therapy because of complaints of nausea. The results with this system of treatment have been better than any other form of therapy used in this hospital for some years, and there have been no patients showing sensitivity to the drug.

I should also like to confirm the observations of Drs. R. D. Catterall, E. M. C. Dunlop, and Eva Gallagher (*Journal*, February 2, p. 287) that oral aminitrazole therapy by itself is completely ineffective in the treatment of vaginal trichomoniasis. In a series of 30 patients treated with 100 mg. aminitrazole three times a day for 10 days and controlled by a similar number of patients given placebo tablets, one patient was "cured" in each group.—I am, etc.,

Manchester, 13. R. F. JENNISON.

SIR,—I agree with your correspondents, Drs. R. D. Catterall, E. M. C. Dunlop, and Eva Gallagher (*Journal*, February 2, p. 287), that oral trichomonicides are so far not of proved value in the treatment of trichomonas infection, either alone or in combination with local treatment. Further, statements in the annotation (*Journal*, January 19, p. 155) on this subject require modification. Monilial infection seems to be essentially a disease of "clean" people. An interesting point has been the apparent increase of thrush infection in relation to trichomonas in this area. *Candida albicans* often worries husbands and gives them pruritus, and I cannot agree with your statement that this is rarely found. As regards the use of nystatin, it has not been employed long enough for its value to be fully assessed, and it occasionally gives rise to reaction. "Pruvagol" is not mentioned in treatment, but it has proved its worth as a bland and efficient therapy over the last few years, unlike other suggested treatments.—I am, etc.,

Cheltenham. STANLEY A. BOND.

Fever after Mitral Valvotomy

SIR,—Your annotation (*Journal*, February 9, p. 332) on the post-commissurotomy syndrome (p.c.s.), while referring to American papers, omits reference to the only British publication on the subject.[1] Though this appeared a few months after the paper of Dresdale and his colleagues,[2] the results were made public in a joint communication with Dr. M. M. Zion at the annual meeting of the British Cardiac Society in May, 1955.[3] We were then able to prove that the p.c.s. was not, as hitherto believed in America, a superadded rheumatic pericarditis, but was the accentuation, persistence, and recurrence of the normal post-operative sequelae, of which traumatic pericarditis is one. Since the pleural effusion, contrary to what happened in the uncomplicated cases, remained blood-stained for weeks after the operation in the p.c.s. cases, we believed that oozing from the auricular wound was responsible for the recurrent pleuropericarditis. Loculation of the effusion and left basal lung consolidation were additional factors in some of our patients. At the time when our material was collected the incidence of p.c.s. was 20%. At present, when loose suture of the pericardium has been adopted, as suggested by your leader writer, the syndrome has become a rarity.—I am, etc.,

London, N.W.3. C. PAPP.

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Pathogenesis of Rheumatic Endocarditis

SIR,—The leading article on the pathogenesis of rheumatic endocarditis (*Journal*, February 2, p. 273) contains several misleading and controversial statements and omits discussion of the evidence against the views expressed. While the work of Magarey[1] and Tweedy[2] describes one mechanism for the production of rheumatic valvular deformities—i.e., the deposition of fibrin on the surface and its incorporation into the valves—Tweedy is on much more debatable ground with his view that the eosinophilic material found deep in the valves in acute rheumatic disease is entirely due to the same mechanism. Having shown that it is possible to have fibrin incorporated into valves from the surface, Tweedy's main argument appears to be based on the comparative absence of a fibrin-staining component in Aschoff nodules in the myocardium. He omits, however, to describe the type of lesion called "reticular" Aschoff body by Gross and Ehrlich[3] which appears to correspond with the "*Frühinfiltrat*" of Klinge.[4]

In this type of lesion there is an interlacing group of eosinophilic homogeneous fibres, many of which are continuous with uninvolved collagen fibres at the periphery of the lesion, and these eosinophilic fibres frequently stain with all the usual fibrin stains. This material is similar in staining properties to the eosinophilic material found in the valves. This is an uncommon type of lesion, and, according to Gross and Erhlich, is found only in acute rheumatic fever, usually in children, and most frequently in a first acute attack. Similar material is also found in the joints, blood vessels, and subcutaneous nodules. Because of the variations in morphology and staining reactions this material has been called "fibrinoid." The debate on the nature of this substance in rheumatic fever still continues, and substances with similar staining characteristics are found in other diseases—rheumatoid arthritis, disseminated lupus erythematosus, dermatomyositis,

polyarteritis nodosa, etc. There is considerable evidence that these substances do not consist of fibrin and may not be the same in different diseases.[5–8] The fibrinoid hypothesis, however unsatisfactory the name, does not depend on the nature of the lesions in the valves of acute rheumatic disease. It is a concept based on the changes in many tissues in many diseases. The views expressed by Tweedy on the "myxomatous" material in the valves of acute rheumatic disease are also open to question. A certain amount of mucoid material is present in many normal heart valves, and this is greatly increased in active rheumatic disease, where it may also be found in the subendocardium, mainly on the left side of the heart, the myocardium, and around and within blood-vessel walls. It is commonly associated with developed Aschoff lesions in these situations, and, according to Talalajew[9] and others, precedes the deposition of the eosinophilic material. My own observations on this mucoid material will be published shortly. It is found in situations where organizing thrombus can be ruled out. Organizing thrombus also contains similar material. It may not be justified to interpret its appearance in the valves as due to organizing thrombus.

The most recent evidence of rheumatic heart disease has been provided by biopsy material from patients undergoing valvotomy. These patients have no clinical evidence of rheumatic activity, and in this centre approximately half give no history of a previous attack of acute rheumatic fever. The surprisingly high incidence of histologically active lesions (approximately 64% of 350 cases in this centre), which include some of the earliest described forms of lesions, makes it likely that subclinical active rheumatic disease may be just as important a factor in producing valvular deformities as organizing thrombus. As Tweedy himself admits, definite Aschoff nodules are found in the valves of some cases of rheumatic heart disease. It seems a more reasonable hypothesis that both factors—repeated attacks of subclinical rheumatism and organization of deposited fibrin—contribute to the valvular deformities.

The fibres demonstrated by the electron microscope in normal aorta and atheromatous plaques by Levene[10] and in the endocardium in fibro-elastosis by Still and Boult[11] have a 230 A banding similar to fibrin, but Porter[12] has shown that tissue cultures of fibroblasts grown in media containing no fibrinogen produce fibres with a periodicity of 200–220 A, and these thicken and mature to fibres with a 640 A periodicity. It appears from this work that young collagen fibres have electron-microscopic appearances similar to that of fibrin. More evidence will be required before one can accept the conclusions of Levene and Still and Boult.—I am, etc.,

Birmingham. R. LANNIGAN.

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Synthetic Amino-acid Diet

SIR,—Cases exist where intolerance to protein develops so swiftly and severely that it is difficult to supply sufficient nutrition to keep the patients alive. The use of cortisone preparations or protein hydrolysates, such as "hepovite," is often of use. However, when all else fails it has been found, in the case of two twin children at least, that a diet made of pure synthetic amino-acids is of value. The formula used was: glycine, 30 parts by weight; L-arginine, 30; L-histidine, 20; L-lysine, 70; glutamic acid, 120; L-aspartic acid, 70; L-α-alanine, 10; DL-valine, 60; L-leucine, 100; L-isoleucine, 10; L-proline, 40; DL-β-phenylalanine, 40; DL-serine, 40; DL-threonine, 40; L-tyrosine, 30; L-tryptophan, 4; L-cystine, 40; L-methionine, 20. This was supplemented with glucose and vitamins to make the complete diet. A major disadvantage is the high cost (£180 a kilogram) of the treatment. However, the symptomatic improvement is considerable. It is hoped to publish a fuller report in due course.—I am, etc.,

Marlow, Bucks. B. JAMES.

Translumbar Aortography

SIR,—Mr. H. Gaylis and Dr. J. W. Laws (*Journal*, November 17, 1956, p. 1141) are to be congratulated on their fine demonstration of dissection of the aorta as an occasional complication of translumbar aortography. Recently I analysed the possible causes of spinal cord damage during aortography,[1] and I would like to mention several points relevant to the present discussion.

The cord may be damaged either by ischaemia, secondary to occlusion of a lumbar artery, or by a chemotoxic effect of the contrast medium. Occlusion of a lumbar artery during aortography may occur in a number of ways. First, the lumbar arteries, as they run posteriorly around the vertebral bodies, are particularly exposed to the risk of trauma during the introduction of the needle. Secondly, an atheromatous plaque, such as is commonly found surrounding the mouth of a lumbar artery, may be disturbed so as to block the artery. Thirdly, an intramural collection of contrast medium or blood may occlude the artery, as shown by Mr. Gaylis and Dr. Laws. Thus, although I agree that the instances of paraplegia reported by Antoni and Lindgren[2] and by Boyarsky[3] were probably the result of ischaemia, it is not necessary to postulate that this was the result of aortic dissection. Occlusion of a lumbar artery will result in spinal cord damage only if that artery supplies blood to the cord substance and probably only if the collateral circulation is poor; this is the likely explanation of the rarity of such an injury. However, the risk is inherent in the method when aortography is performed by the translumbar route. This is one reason why the retrograde method of Seldinger[4] should be used where possible.

Chemotoxicity of the contrast medium was almost certainly the cause of spinal cord damage in the case which I reported, and I believe that this is responsible for the recent increase in the incidence of complications following aortography. However, the incidence may be minimized by a careful technique. In this regard I heartily endorse the opinion of Dr. David Sutton (*Journal*, January 26, p. 225), that a test injection is essential to show that the tip of the needle is centrally placed in the aorta, at the correct level. If this is done, and a short bevelled needle used, dissection of the aorta should be rare and the risk of chemotoxic injuries reduced. The latter is diminished further by lowering the volume and rate of injection, as suggested by Dr. Sutton. In addition, as a summation effect of the contrast medium on the tissues probably exists,[5] it is unwise to repeat the injection at the one examination. Finally, the trend towards selective angiography by the Seldinger method, using small injections, should be associated with a very low incidence of complications. It is only by careful analysis that the cause of these complications can be elucidated, and in this manner Mr. Gaylis and Dr. Laws have made a valuable contribution.—I am, etc.,

Melbourne, Australia. W. S. C. HARE.

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SIR,—We would like to comment on the correspondence which has followed our article on aortic dissection as a complication of translumbar aortography (*Journal*, November 17, 1956, p. 1141).

We agree with Dr. David Sutton (*Journal*, January 26, p. 225) that a trial injection of a small quantity of contrast medium to localize the needle point is a precaution of value in that it will prevent the injection of the bulk of the contrast medium into a major branch of the aorta. But, as Lindgren[1] has already pointed out, although this

precaution will reduce the incidence of extra-luminal injection it will not prevent it altogether. As Dr. Sutton has stated, we do not use a hand-pressure pump in order to inject the contrast medium unduly rapidly, but simply as a matter of convenience. We use a long length of tubing in order to keep at a distance from the patient during the exposure of the films. This naturally increases the resistance to the flow of the concentrated contrast medium and makes hand injection difficult. While we deprecate unduly rapid injection, our experiments have shown that it requires very little pressure for an intramural injection to cause dissection. It can occur even with gentle hand injection.

Dr. Sutton refers to two cases in which paraplegia followed aortography, one reported by Boyarsky[2] and the other by Antoni and Lindgren.[3] We attributed these cases of paraplegia to aortic dissection, but Dr. Sutton suggests that excessive doses of contrast was the major factor. We find this suggestion difficult to accept since reference to the original papers gives no evidence that excessive quantities were used. In the case reported by Antoni and Lindgren the dose is not stated, and in that of Boyarsky a total of 15 ml. of 70% sodium acetrizoate was used. Moreover, from the description of both aortograms there is strong evidence of aortic dissection. In the case described by Boyarsky there was technical difficulty and the left common iliac artery was not outlined. This was not due to thrombosis of the left common iliac artery, since before the procedure all "peripheral pulsations were symmetrical and normal." These appearances are very suspicious of aortic dissection and are similar to those in Case 2 described in our paper. Incidentally, it should be noted that in this case a trial injection was given; a pressure-apparatus was not used, and the injection was given by hand. In the case described by Antoni and Lindgren "an increased resistance was felt during the injection which was therefore interrupted, but a certain amount of contrast medium had, however, been injected paravascularly. . . . Contrast injection showed that only a part of the aorta down to the superior border of L 2 and the vessels in the upper part of the abdomen became contrast filled." Not only is there no evidence that excessive contrast was used, but it seems clear that some of the contrast was injected outside the lumen. It should be noted, in this case too, the injection was made by hand.

The case of paraplegia reported by Hare,[4] and referred to by Dr. Sutton, is quite different in that a large volume of contrast medium was injected, and we agree that this may well have been the major factor in this case. But it should be noted that Hare himself states that an intramural injection causing blockage of a lumbar artery and ischaemia of the cord is a possible explanation. Hare considers this analogous to the "transverse lesion of the spinal cord which may accompany a dissecting aneurysm of the aorta which almost certainly results from occlusion of the mouths of intercostal arteries," a point not mentioned by Dr. Sutton.

Again we would stress that aortic dissection in minor or major degree is not uncommon, and that its significance in the past has not been universally appreciated even by experienced radiologists. Two recent examples will suffice. A recent American textbook on peripheral vascular disease[5] illustrates an aortogram in which the bulk of the contrast was injected into the superior mesenteric artery. The patient died from infarction of the bowel, allegedly from the toxic effects of the contrast medium. A close study of the illustrated aortogram, however, shows a double contrast shadow extending along the superior mesenteric artery and some of its branches—clear evidence of arterial dissection. Again, in the *British Medical Bulletin*[6] there is an illustration of "a normal arteriogram of the left kidney" in which a minor degree of aortic dissection is clearly shown but not commented upon. The letter from Mr. R. E. Horton and Dr. F. G. M. Ross (*Journal*, February 9, p. 340), in which they quote Dr. Sutton, may give the impression that we consider the toxicity of contrast media to be of no importance. This is not the case. A discussion of the toxicity of contrast media, a subject of which much has been written already, was outside the scope of our original paper, which was concerned solely with the complication of aortic dissection. We make no claim that dissection is responsible for all the complications of aortography, but simply that it is important because it "may give rise to misinterpretation in diagnosis if its true significance is not appreciated; there may be serious sequelae; and it may occur in spite of the most scrupulous technique. Furthermore, we believe that this event is not uncommon and that it offers an explanation for some of the complications of aortography usually ascribed to arterial thrombosis or to the direct toxic effect of the contrast medium." In our opinion, some complications are caused by the toxicity of the contrast medium, some by dissection, and some by a combination of these two potential hazards.—We are, etc.,

H. GAYLIS.
J. W. LAWS.

London, W.12.

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Cancer of the Bladder and Tobacco

SIR,—An annotation in your *Journal* (January 26, p. 218) discussed the reported increase in incidence of carcinoma of the bladder in males (as opposed to females) in Denmark and England. The trends are regarded as so similar in type to those which have been reported for cancer of the lung that it was thought that a common factor might be operative for the two types of cancer. Two pieces of evidence were brought forward to support this concept: an American investigation into the smoking histories of hospital patients, in which it was shown that more men with cancer of the bladder had been smokers than had those with benign bladder disease, no disease, or prostatic cancer; and an experiment performed by L. R. Holsti and P. Ermala in Finland.[1] These authors swabbed the lips and oral cavity of mice with tobacco tar for 140 consecutive days and observed the animals for 12 months from the beginning of treatment. They claimed that papillomatosis of the urinary bladder was present at death in 35 of 40 mice and that in 6 animals there was malignant papillary carcinoma. It is not stated that the bladders were distended before fixation, and the one photomicrograph of a benign papilloma presents the appearance observed with a mucosa folded as a result of muscular contraction. The other photomicrograph illustrating the paper is open to interpretations other than that of infiltrating carcinoma.

I know of only one chemical which after oral administration has induced true papillomas and carcinomas of the bladder in mice. This is 2-acetylaminofluorene,[2] a carcinogen potent to other species. In groups of approximately 20 mice of different strains the yield of tumours ranged from 22 to 78% of animals surviving 20 to 77 weeks, and most of the tumours arose after 52 weeks of treatment. Both benign and malignant tumours could be demonstrated in the distended bladder, some of the latter invading completely the muscular wall.

My desire is to advise caution in accepting experimental data as supporting evidence for the carcinogenic activity of tobacco tar until convincing experiments have been performed.—I am, etc.,

GEORGIANA M. BONSER.

Leeds, 2.

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Cancer of the Larynx in Women

SIR,—Sir Ernest Kennaway, F.R.S. (*Journal*, February 9, p. 299), draws attention to the peculiar "reversed gradient" in statistical graphs of cancer of the larynx in women. He suggests as a possible explanation the consumption of white bread and tea by the rural housewife. I do not know whether there are any records available to show that more white bread is consumed in the agricultural areas; if there are I would be inclined to think that the feeding of bread to poultry would account for it, since white bread is an excellent food for chickens. The country housewife spends a great deal of her time indoors of necessity, probably more than her city sister. The urban housewife has clean electricity and gas to assist her in cooking and in laundry work. The air of the countryside is clean, but any doctor

visiting a rural house on wash-day, or any day for that matter, will know how much "smog" can be confined in the kitchen. The drudgery of stoking the stove and cleaning the grate must surely produce its morning dose of carcinogen. The chronic bronchitic is often benefited when his spouse persuades him to let her have a modern solid-fuel cooker. The drudgery is hastily abandoned when electricity is made available to the rural housewife, a change proceeding apace. If this is one of the factors, there should soon be an alteration in the graph.

During the last few decades there has been another change in the customs of the rural dweller—the advent of the pressure paraffin mantle lamp and pressure stove. These two have possibly altered the home atmosphere, adding hotter fumes to the living-rooms at night. These "transitional" rural amenities will, of course, gradually give way to electricity. The rural housewife, of course, might take up cigarette smoking to while away the time and idle hours brought by electricity, and so transfer the carcinogen from the upper to the lower respiratory tract.

It occurs to me that, in all the various reports on the search for a carcinogen in cigarette smoke, the mode of ignition has apparently been neglected. The 40-a-day smoker, after all, might use 40 matches a day. Lighter, fusee, humble match, or safety-match—is there any difference? Is the safety-match really safe?—I am, etc.,

Camborne, Cornwall. S. W. V. DAVIES.

Poliomyelitis Vaccine

SIR,—As a general practitioner who expects to be using the poliomyelitis vaccine as soon as it becomes available, I feel that the nature of the contaminant which has held up distribution should be revealed to the profession; all we have to go on so far is the statement in general terms put out recently by the press and B.B.C. Assuming, as anticipated in this statement, that the batch will get through after further tests, it would be important also to let us know if the antigenic action of the vaccine will be in any way impaired.—I am, etc.,

Huddersfield. LESLIE BALLON.

Intramedullary Nailing

SIR,—Mr. A. E. Stevens and Mr. J. Pett Turney (*Journal*, January 26, p. 208) describe intramedullary nailing as the ideal treatment for fractures of the shaft of the femur. A method which involves the risks of an open operation is being advocated for the treatment of a fracture which commonly unites without difficulty when simply immobilized with sufficient traction to restore reasonable length to the limb. If no other protest is heard, mine shall be: not against the method, for which there are certain indications, but against its indiscriminate employment, which betrays a lack of any sense of proportion.

They mention that four of their patients died; they say that blood for transfusion should always be ready when this operation is performed; and then use the operation for fractures in Paget's disease, the pathological fracture above all others which is known to unite whatever else happens. The powerful muscle spasm which is revealed by a bent nail and delayed union means nothing, except that a bigger and better nail should be inserted. They do not mention that variety of fractured femur where the muscles are completely stripped from one or both fragments, which usually occurs in the upper third of the shaft, and where deformity is quite uncontrollable *except* by an intramedullary nail. Such fractures are not common, but when encountered the risks of major operation weigh less in the balance than persistent crippling deformity. Intramedullary nailing is very clearly indicated in these fractures.

The truth is that most fractures of the femoral shaft unite readily with simple treatment and at little risk to the patient. Furthermore, the result is a good functional limb. The radiographic appearances are not always very pretty; and therein, I suspect, lies the trouble.—I am, etc.,

Liverpool, 1. E. N. WARDLE.

Methyltestosterone Therapy

SIR,—In reply to the letter from Drs. G. L. Foss and S. L. Simpson (*Journal*, December 15, 1956, p. 1426), I report a case of a woman aged 56 with generalized osteoporosis attributed to 20 years' immobilization in bed for supposed spinal disease. In the course of rehabilitation she was treated, *inter alia*, with methyltestosterone 30 mg. daily. After five months on this dosage she developed deep jaundice with pruritus and the general picture of obstructive jaundice. Investigation one month after the onset showed: serum bilirubin, 4.4; direct positive van den Bergh; alkaline phosphatase, 20; thymol turbidity, 2; serum albumin, 2.68; globulin, 3.12; E.S.R., 25; blood count normal. Testosterone had been stopped immediately at the onset of jaundice, and this began to subside in about a month; it has since completely disappeared and the patient is apparently well. There is no proof that jaundice was due to testosterone, and infective hepatitis is a possibility, but the sequence of events is suggestive.—I am, etc.,

Leamington Spa. W. M. PRIEST.

Stereotaxis as an Aid to Neurosurgery

SIR,—In your annotation (*Journal*, February 9, p. 333) on stereotaxis as an aid to neurosurgery, the credit for the application of the Horsley and Clarke[1] stereotaxic technique to human neurosurgery is given correctly to Spiegel, Wycis, and their co-workers.[2] It should also be emphasized, however, that these workers recognized from the outset the impossibility of defining the co-ordinates of human subcortical structures from bony landmarks alone. Thus, while Horsley and Clarke defined the position of a point in the animal brain solely by reference to the interaural, midsagittal, and Reid's basal (through external auditory meati and inferior margins of the orbits) planes, Spiegel and Wycis made use of the auditory meati and orbital margins solely in the preliminary step of fixing the basal part of their apparatus to the skull. The co-ordinates of the target nucleus were then based on a "reference point" within the brain and not in the skull. The use of such a point was necessitated by the observation that the centre of the pineal might lie anywhere from 4 to 20 mm. behind the interaural plane, and thus the position of the whole diencephalon would exhibit a corresponding variation in position. The pineal, as identified in a lateral *x*-ray film (with or without encephalography), was in fact chosen as the reference point, and the antero-posterior co-ordinate of the target was measured from this at right angles to the interaural plane.

It may thus be concluded, from the wide variation in pineal position alone, that the neuroanatomist will never be able (as suggested by your annotator) to provide the neurosurgeon with an atlas of the human brain "based on the type of co-ordinates used in the experimental animal." Further, individual variation affects not only the position but also the size of diencephalic structures. An attempt to take into account variations in thalamic size has been made by Hassler and Riechert,[3] who employ a ventricular "base line" connecting the interventricular foramen and the posterior commissure. This line is drawn and measured (with adjustment for *x*-ray magnification) in the patient's lateral encephalogram and in a normal formalin-fixed brain used as an "atlas." The ratio between these two lengths is used to correct the antero-posterior co-ordinate of the target nucleus as measured from the posterior commissure in the atlas brain.

It will be apparent that the use of any co-ordinate system based upon the posterior commissure must involve the assumption that this structure maintains a constant relationship to thalamic and other nuclei. An investigation designed to test the validity of this assumption is nearing completion in the neuropathology department laboratory, Institute of Psychiatry. In a series of 50 hemispheres from 35 normal, formalin-fixed, and suspended brains the ventricular "base line" was marked and coronal cuts made at right angles to this at the posterior commissure and at other more anterior levels. The nuclei present at each level have

been identified in frozen sections stained for nerve cells and for myelin sheaths. It has been found that the coronal planes representing the extreme anterior and posterior positions of the posterior commissure in the series, when identified in any one normal brain (1,350–1,400 g.), are separated by a distance of about 6 mm. It is thus clear that the use of the posterior commissure as a reference point may lead to quite undesirable errors in needle placement. Preliminary studies suggest that the tip of the pulvinar of the thalamus is a more reliable point from which to measure the antero-posterior co-ordinate in that the various thalamic nuclei appear to occupy relatively constant positions along the antero-posterior axis irrespective of its length.

Individual variation within the diencephalon, recognized by Spiegel and Wycis and most subsequent workers, remains nevertheless the central problem in human stereotaxic brain surgery. Until this variation can be accurately measured and corrected for, any one stereotaxic "atlas" used in conjunction with any one apparatus (however mechanically accurate) can only lead the neurosurgeon to believe that he employs a technique endowed with a degree of precision that has all too little basis in fact.—We are, etc.,

J. B. BRIERLEY.
E. BECK.

London, S.E.5.

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Mild Endogenous Depression

SIR,—Dr. C. A. H. Watts (*Journal*, January 5, p. 4) has performed a valuable service in again emphasizing the frequency and importance of endogenous depression. But, like Dr. R. J. T. Woodland (*Journal*, January 19, p. 167), I believe that most endogenous depressive illnesses do not clear up spontaneously as quickly as could be desired. I agree that the understanding support of the family doctor can be of great help to the depressed patient, but this support alone is not likely to curtail the illness, and I consider that E.C.T. should be considered in even quite mild depressive states.

In the course of seven years' experience with E.C.T. as a therapeutic tool used in the out-patient departments of general hospitals, I have repeatedly met patients who have been depressed for many weeks or months before finally being referred to a psychiatrist. One patient referred recently had been depressed for about 12 years, and so retarded that he had developed a severe postural oedema of the feet (with incipient gangrene of the toes) before being referred; he required only four out-patient attendances for E.C.T. to gain a complete remission of his depression. Even quite "mildly" depressed patients may become more seriously ill, and even suicidally so, if treatment is unduly delayed. Dr. Watts himself tells us that, of his patients who took overdoses of sedatives, "it must be admitted that three of the four cases were viewed before this episode as cases of mild depression." Again, Dr. Watts's patient, described as simulating gastric carcinoma, was diagnosed as being in need of E.C.T., and had not recovered until eight months later because he refused to enter a mental hospital for E.C.T. Had out-patient E.C.T. been available to him, he might have been saved a long period of illness.

My plea is twofold: first, for the establishment in all districts of clinics where E.C.T. can be given on an out-patient basis to suitable patients; and, secondly, that practitioners faced with depressed patients, showing the symptoms so admirably recounted by Dr. Watts, should refer them without delay for a psychiatric assessment with a view to E.C.T. in suitable cases. I am sure that by this means a great deal of unnecessary suffering and perhaps a number of suicides can be averted. It is dangerous to delay E.C.T. pending the development of a more serious depression, and it should be remembered that many depressed patients feel ashamed of their symptoms, and therefore cover them up as much as they can; these patients may be far more ill than they appear. A suicidal attempt in an endogenous depressive illness is the commonest cause of suicide in older people; but suicidal attempts in a depressed patient undergoing E.C.T. are rare.—I am, etc.,

Coulsdon, Surrey. H. E. S. MARSHALL.

SIR,—In view of the interesting correspondence which has arisen on this subject, I wonder if you can spare room to publish a few more observations. In my opinion this condition is a mild psychosis, and not a form of neurosis as suggested by Dr. R. Macdonald Ladell (*Journal*, January 26, p. 226). At any rate it does not respond to the kind of psychotherapy I am used to giving to anxiety states. I realize that there is sometimes great difficulty in arriving at an accurate diagnosis, and that at times we all attach the wrong label. In a personal note on my paper (*Journal*, January 5, p. 4) an eminent consultant suggested that many of these cases were wrongly diagnosed by the psychiatrists, and exposed to psychotherapy of a kind which they find hard to bear because it asks too much of them. It is as well to realize that psychotherapy, as well as the physical forms of treatment, has its dangers.

Dr. R. J. T. Woodland (*Journal*, January 19, p. 167) agrees with the high incidence of the condition in general practice, and together with Dr. R. Thompson (*Journal*, February 16, p. 401) he suggests that these patients should be given immediate E.C.T. This form of treatment is a traumatic operation, and about 30% of my patients who have had it have failed to respond adequately. While I am grateful for the relief that it gives to most, at this stage of our knowledge I would hesitate to recommend it for all my mild cases. I feel that it is important to take time to observe the patient, to win his confidence, and in general to size the case up. I think that I may have misled readers when in my paper I suggested that a depression which had not cleared after three months needed E.C.T. This does not mean that I sit and watch the case for that period of time. Most of them have been ill for weeks before they consult me, and that time is taken into account. If every mild depression was sent along for E.C.T. the present psychiatric services would be overwhelmed. About five cases in every thousand patients at risk would require E.C.T. every year. They do not all need it. The condition can be very short-lived. I have a patient who has had a dozen severe episodes, and in her case there is no doubt about the diagnosis. Usually the attacks only last for two weeks. On the two occasions when E.C.T. was given the disease lasted longer.

It seems to me that there should be a further stage in this investigation. These depressed patients, all of them, must be seen by both the psychiatrist and the general practitioner. The diagnoses can be cross-checked, and a policy as regards E.C.T. can be undertaken. I am not prepared to come down on either side of Dr. Ladell's fence. I would prefer to sit on it.—I am, etc.,

Leicester. C. A. H. WATTS.

Fatal Reactions to Local Anaesthetics

SIR,—In days when new drugs and, indeed, new groups of drugs are being offered to the profession with quite extraordinary frequency, it is highly commendable that you should issue yet another warning on the dangers of these useful agents unless they are used with the utmost respect and care.

It is difficult to come upon an explicit and complete setting forth of the multiplex posology of procaine hydrochloride, lignocaine hydrochloride, etc. Nevertheless, one does know that the stronger—e.g., 2%—solutions of lignocaine hydrochloride become, by virtue of the drug's relatively slow destruction, about half as toxic again as procaine hydrochloride; 500 mg. thus becomes a maximum dose for lignocaine hydrochloride—i.e., 25 ml. of 2% solution. Without adrenaline this maximum should be substantially reduced to, say, 200–300 mg. (10–15 ml. of 2% solution). This is not to say that these doses may not, in experienced hands, be exceeded. I feel, nevertheless, that your annotation implying that the dose of 2% lignocaine hydrochloride solution

for injection can be 30 ml. errs on the side of buoyancy, bearing in mind the notorious history of accidents surrounding this class of drugs. Rather than an upper limit dose, surely it would be perhaps wiser to advertise that the occasions on which it is necessary to use more than a few ml. of so strong a solution are infrequent indeed. Furthermore, to give a simple and unqualified number of ml. below which the drug is safe and above which it is presumed to be highly dangerous takes no account of the many factors of patient variation.—I am, etc.,

London, N.3 ERIC K. GARDNER.

The Black Sheep

SIR,—There is a saying "Fingers were made before forks." It is equally true, and less futile, that forks are an improvement on fingers. I am a retired general practitioner, and, still retaining a car, can be a little helpful visiting the shops. I have been astonished at the lax way of dealing with the sale of cooked meats, and have come to the conclusion that they should not be sold as a sideline in butchers' shops without more stringent supervision by the sanitary authorities.

I have seen cooked meats cut with the knife used for cutting raw meat and handled by hands which are still "sanguinary." I have also seen corned beef, boiled ham, roast pork, and jellied veal cut on the machine used for cutting raw bacon, and meat pies lifted by the same unclean fingers. The idea of using a separate knife and fork for these cooked meats is never thought of by the butchers, nor enforced by the authorities.

Confectioners and grocers are often remiss in their handling of these goods. The other day I saw some boiled ham being cut by a grocer, and watched him almost daintily arrange the pieces on the wrapping-paper with fingers in marked contrast to his movements. I noticed also that he sold potatoes. As to confectioners, at this time of the year with its colds and many nasal-borne organisms, one's imagination boggles at the thought of diminutive handkerchiefs, furtively used, and the handling of cakes and bread. Why cannot uncut bread be wrapped in the same way as cut bread? And why not cake-lifters?

I have turned this over in my mind for a long time, and now felt that this would be a good opportunity for its insertion between the profound technical and clinical comments of the well-informed.—I am, etc.,

Bradford, 5. ALLEN GLENN.

SIR,—It is only necessary to look closely at plug handle or lever in public lavatories to appreciate how gross contamination of the right hand can be. Washing can save oneself from any consequence, but the crowds that would fail to wait for free tap or basin at peak periods in market towns and holiday resorts defy estimate. Pedal flush control appears to be the solution of this chain of infection. A pedal lever is relatively foolproof, far more difficult to remove than chain or handle; manufacturers stock them and say that they need not cost more than pull plugs if the sale were greater. The demand for installation in public lavatories is almost non-existent. Why is that? Should not the medical profession express an opinion on the matter?—I am, etc.,

London, W.2. ANNIS GILLIE.

Rh–Hr Nomenclature

SIR,—Logic does not seem to be Dr. A. S. Wiener's strong point lately (*Journal*, February 9, p. 339). 50% of letters go against him, so his committee is fortified "in its conclusion that the C-D-E notations must be discarded." A lesser man might have thought that such a response showed the need for a compromise, using both systems, in the United States at any rate.

Sometimes he uses specious arguments,[1] which can often be turned against him.[2] All too frequently, however, he descends to rhetoric rather than make any pretence at scientific argument, and the last paragraph of his letter to you is a good example of this. He has used the word phenotype for a list of antiserum reactions, and has separated C from c, and E from e, thus making his hypothetical student do an entirely unnecessary mental anagram. There is no problem so simple that it cannot be made difficult by being expressed badly. Even Dr. Wiener would not, I hope, use the Red Queen's arithmetical problem as an argument for abolishing the numeral 1 or the process of counting.

Dr. Wiener should remember that rhetoric is the harlot of the arts; what she will do for him she will do equally well for his opponents—in this case even better. Let us rewrite his question in his own nomenclature, misusing the word phenotype just as he does: "What genotypes correspond to the phenotype little rh single prime plus, large Rh nought minus, little rh double prime plus, little hr single prime minus, little hr double prime plus?" asked the professor.

If one is to take parallels from Lewis Carroll, Jabberwocky is a more appropriate one than the Red Queen's question, which is, after all, as simple as counting up to ten.—I am, etc.,

Colchester. J. W. NICHOLAS.

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Non-ulcer Dyspepsia

SIR,—In your comment (*Journal*, February 16, p. 391) on the excellent paper by Dr. A. Wynn Williams and his colleagues on the investigation of non-ulcer dyspepsia by gastric biopsy (p. 372) you point out that "this procedure [of gastric biopsy] does not seem likely to enter into routine medical practice for the investigation of dyspepsia." May I therefore suggest that their observations could be usefully extended by co-ordinating the *x*-ray appearance of the motor function of the stomach with its secretory function?

In a recent monograph[1] I have summarized the evidence which supports the view that the secretory and motor functions are parallel manifestations which respond simultaneously and in an identical manner to a given stimulus and that they cannot be dissociated; the gastric motility (which should not be confused with the emptying time of the gastric content) gives, therefore, a fair indication of the gastric secretion.

The authors also show how difficult it is to classify gastritis on a histological basis. I have suggested[2] that the behaviour of the gastric secretions provides a basis for a clinical classification, because hypersecretion and hyposecretion are manifestations of two unrelated disease entities and not simple quantitative variations due to the same causes.—I am, etc.,

London, W.1. J.-JACQUES SPIRA.

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Incidence of Tuberculosis

SIR,—I note from your report of the proceedings of the Consultants and Specialists Committee of the B.M.A. (*Supplement*, February 16, p. 66) that the Ministry of Health takes the usual attitude of complacency regarding the question of tuberculosis in this country. We are always reading statements in the press that tuberculosis is on the way out and that it is practically non-existent in an infectious form. The presumption is that chest clinics will soon not be required. I would draw your readers' attention (let us hope some of them are M.O.s from the Ministry of Health) to the fact that, in one London Borough alone, 100 cases of active infectious tuberculosis were found through mass *x*-ray examination from February, 1955–6, making a rate of 6.4 per 1,000. In addition, another 72 cases of active tuberculosis were found by the Islington Chest Clinic unit in people working, but not living, in the borough. This quite aside from the fact that 45 cases of bronchial carcinoma were also discovered by the unit.—I am, etc.,

London, N.19. J. WALLACE CRAIG.

Treatment of Herpes Zoster

SIR,—There have been numerous letters and articles concerning the treatment of herpes zoster, and textbooks differ in their advice regarding treatment.

We in this practice have treated over 21 cases in the past year, and, except in two cases, there has been no post-herpetic pain, and in these two cases the post-herpetic pain lasted three months. In no cases did we have to resort to prolonged use of sedatives or analgesics, nor at any time did we have to use powerful analgesics—e.g., morphine, pethidine, amidone, etc. In most of the cases the eruption had been present for two or three days, but in one case it had been present for five days, completely involved T.8, and in addition the patient was seven months pregnant. The method we used was injections of cyanocobalamin, 100 μg. daily for six days, and we painted the eruptions with flexible collodion twice a day, not removing the old paint. If the pain was troublesome the patients were given tab. codein. co., 2 as required. In all cases it was observed—except in the two cases mentioned above—that the pain ceased towards the end of the injections and not later than ten days. The two exceptions were cases in which we tried (1) one injection of cyanocobalamin (1,000 μg.) on the first and third day, and (2) three injections of cyanocobalamin (250 μg.) on three alternate days. In both cases we noticed that the pain was more severe and there was post-herpetic pain.

We are of the opinion that this condition appears to respond to daily injections of cyanocobalamin (100 μg.) and painting with flexible collodion, and that bigger doses do not have the same effect.—We are, etc.,

R. G. B. WIGODER.
H. G. JEFFS.

London, S.E.6.

Tibial Traction

SIR,—All orthopaedic surgeons will agree with Dr. W. L. Turner (*Journal*, February 9, p. 344) that it is regrettable how many patients, having been treated for a fractured femur, are left with a stiff knee-joint. Unfortunately the cause of this stiffness is more complex than she suggests, and the remedy she advocates—the insertion of skeletal traction devices through the femur instead of the tibial tubercle—would have little effect on the end-result.

The truth of the matter is that some restriction of knee flexion is very often seen after a femoral-shaft fracture, however it has been treated. Adherence of the quadriceps muscles, and a fibrosis in their substance, at the fracture site is apparently the most important cause of this disability, and this often occurs even in cases in which no traction has been applied. Muscle wasting leading to joint instability and retropatellar adhesions are frequently encountered ancillary features.

Even so, and merely on commonsense-grounds, it may at first sight appear desirable to drill the Kirschner wire and Steinmann pins commonly used through the lower end of the broken bone itself rather than through the tibia. But such a procedure has risks of its own—the wire may enter the fracture haematoma or even one of the synovial recesses of the knee-joint. The penalties of infection at either site are such as to make most of my colleagues frown upon the method.—I am, etc.,

RICHARD HARRISON.

London, W.C.1.

Haemoglobin Measurements

SIR,—It is becoming a practice in writing, in giving communications, and sometimes in routine reports from laboratories, to record the haemoglobin in grammes rather than the traditional percentage. While not wishing to depreciate purist tendencies, the value of this terminology alone is questionable. It may be easy for the erudite to think in terms of grammes, but many reactionaries like myself still prefer to think in percentages. There was an excellent purpose in insisting on grammes when the scale in different laboratories varied, but this is now uniform (14.8 g. = 100%), so that a return to a percentage scale would be reasonable. Preferably, both should be given, as measurement in grammes is necessary for calculation of the absolute values. At any rate, may I beg that the habit of certain laboratories in sending out their reports with the haemoglobin in grammes only should cease? It can lead to the bewilderment of the general practitioner, and sometimes the consultant, and bespeaks of "one-upmanship" on the part of the laboratory. My impression is that most directors of clinical laboratories still think and dream of haemoglobin in percentages rather than grammes, or is this accusation unfair?—I am, etc.,

C. F. HAWKINS.

Birmingham.

Suxamethonium and Post-operative Muscle Pain

SIR,—The article by Drs. D. D. B. Morris and C. H. Dunn (*Journal*, February 16, p. 383) describes ways of reducing muscle fasciculations following suxamethonium. They mention chlorpromazine, tubocurarine, procaine, and slow administration of the drug. I have an article awaiting publication which describes a further means of reducing or abolishing these fasciculations. It is based on the slow administration of a diluted solution of suxamethonium under thiopentone narcosis of moderate depth.

The technique for an adult is as follows: Two 20-ml. syringes are used; the first contains 1 g. thiopentone in 20 ml. water (5%), the second contains 100 mg. suxamethonium in 20 ml. water. Thiopentone solution is injected intravenously at the rate of 1 ml. every 5 seconds until the patient is on the verge of respiratory arrest, actual arrest being avoided; oxygen is given from a face-mask from the time that the patient loses consciousness. Suxamethonium solution is now injected at the same rate until respiratory paralysis occurs. By this method muscle fasciculations can, with practice, be abolished in every case. A far simpler method to abolish fasciculations is, of course, to use gallamine or tubocurarine. For an adult I use 50 mg. of the former, and 10 mg. of the latter, given before the thiopentone, or mixed with it; time has to be allowed for the curarizing drug to act if the fasciculations are to be abolished entirely. Bizarre effects may, of course, occur from using two different types of relaxant in one case. If 10 ml. suxamethonium is injected rapidly fasciculations will occur, and this possibly accounts for the failure of this method as described by Drs. Morris and Dunn.

While I do not believe that the intensity of visible fasciculations is the whole story as regards post-operative muscle pain, I do think that abolition of the visible fasciculations reduces it. I have no figures to offer for the incidence of post-operative pain in my practice, as, for some reason, no case has ever been drawn to my attention. Perhaps this is because I almost invariably use more than 0.5 g. thiopentone for induction.—I am, etc.,

JOHN BULLOUGH.

Dartford, Kent.

Compound Aspirin and Steroid Tablets

SIR,—The argument, as presented in your annotation (*Journal*, February 16, p. 395), tends to be slightly one-sided, and, in addition, contains certain inaccuracies requiring correction. Presumably, this is because the writer did not have all the relevant information at his disposal. In view of this, you may wish your readers to have the following information so that they will be in possession of all the available evidence and thus able to draw valid conclusions.

Using the "cotton pellet" test[1] and the "granuloma pouch" test,[2] it has been shown that approximately the same anti-inflammatory effect is produced by a combination of aspirin and prednisolone as that produced by double the amounts of either ingredient alone. The conditions of these tests differ slightly, but the findings suggest that the combination results in an additive anti-inflammatory effect. Thus there would appear to be reasonable grounds for believing that the combination would be more effective clinically than either ingredient alone.

Reports of clinical studies[3,4] indicate that the combination of 0.3 g. aspirin and 0.5 mg. prednisolone is effective in the control of cases of rheumatoid arthritis and allied conditions. Further, some investigators[3] find that the highest daily maintenance dose of cortisone tolerated by post-meno-

pausal women is 25–30 mg., by pre-menopausal women 35–40 mg., and by adult males 40–50 mg. (these doses correspond respectively to 5–6 mg., 7–8 mg., and 8–10 mg. prednisolone). They state that they prefer to keep below these maximum doses, and so it is reasonable to infer that doses of prednisolone below these levels can be effective. Thus, if the additive factor is taken into consideration, the recommended daily dose of this combination of aspirin and prednisolone can reasonably be expected to produce a therapeutic effect.

The above evidence tends to suggest that this particular combination of aspirin and prednisolone may well deserve a place in therapeutics—at least it is founded on a rational basis.—I am, etc.,

J. A. BRAUN,
Managing Director,
Upjohn of England Ltd.

London, W.1.

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Bolus Obstruction

SIR,—Recent letters on the above subject prompt me to record the following case. A man, age 50 years, who had had a polya gastrectomy performed in 1949 for a chronic gastric ulcer, consulted me at my morning surgery, which he had to pass on his way home from work. I may add that he was cycling. He complained of abdominal pain of a griping character. There had been no vomiting at that time, although he did vomit before he arrived in hospital. The bowels were said to be open that morning and the stools loose. On examination there was very marked visible peristalsis in the right iliac fossa and extreme tenderness. He was admitted to the General Hospital, Northampton, under the care of Mr. R. O. Lee, by whom the partial gastrectomy had been performed. At operation three segments of orange were found impacted in the terminal ileum. The patient subsequently remembered eating a rather dry, pithy orange some fifteen hours previously.

The object of this note is to suggest that, with the increasing popularity of surgical treatment for peptic ulcer, it is extremely important that we should warn these patients how important thorough mastication of the food can be. Previous letters have recorded cases of small-intestine obstruction with a green fig and with a brussels sprout. These patients had a normal pylorus. How much greater must be the hazard of the patient whose pylorus has been removed.—I am, etc.,

JOHN T. CORBETT.

Wellingborough.

Neostigmine-resistant Curarization

SIR,—Dr. K. H. Oldfield's letter (*Journal*, December 29, 1956, p. 1544) is of great interest, but whether it offers proof that intracellular potassium loss is not concerned in neostigmine-resistant curarization is questionable. Should one be influenced by the evidence of this one case; or accept the contradictory findings of an experimentally proved antagonism between potassium and curare, coupled with not infrequent clinical accounts of improvement or reversal of persistent curarization by potassium infusions? In fact, it is doubtful whether the case he reports bears more than a superficial resemblance to the type of case in which neostigmine resistance occurs.[1 2] Further information, not provided in Dr. Oldfield's abridged report, would be needed to decide this matter, but his account suggests his patient's illness resembled a condition of primary aldosteronism as described by Conn[3 4] and later by others.[5–10] Recent reviews suggest a well-defined syndrome[11 12] with a long history (usually over a year), and a low serum-potassium level falling below 2 mEq/l., but with surprisingly inconstant muscle weakness—marked weakness often occurred only during an infective episode, and spared respiration. Hypertension is a constant feature, and acidosis has not been encountered; metabolic alkalosis is frequent, with the appearance of tetany.

This picture is very different from that of the patient dying after his anaesthetic: he is starved, weak, and has a hypotension that responds poorly to vasopressors—a state characteristic of hypokalaemia.[13] Electrolyte depletion has been rapid, and there is a metabolic acidosis which contributes considerably to the intracellular potassium loss and hinders its replacement. The endocrinological background of these two types of case is probably different: secretion of aldosterone is largely independent of the pituitary influence that promotes secretion of other corticoids.[13 14 15] The acutely ill patient generally shows a strong pituitary-adrenal type of response producing a different range of steroid hormones.[16 17] If the development of neostigmine resistance is due to a defect of neuromuscular transmission, then certain of these differences become important.

Hypokalaemia with alkalosis is less likely to produce paralysis than with acidosis.[18 19] Acidosis is accepted as causing a loss of intracellular potassium,[19] and it is known that alkalosis raises the intracellular potassium at the expense of extracellular levels.[20] The muscle end-plate potential is closely linked to the ratio of extracellular to intracellular potassium.[21] Rapid alterations of this ratio could lead either to hyperpolarization or to partial depolarization of the end-plate, thus interfering with the muscle's response to nerve impulses.[22–24] Such a swing between the two extremes may have been achieved by Dr. Bourne and Dr. Shackleton by rapid transition from respiratory acidosis to respiratory alkalosis (*Journal*, December 22, 1956, p. 1485). Perhaps this is the connexion between persistent curarization and respiratory acidosis that several of your correspondents recently have remarked.

It appears that the body can readjust the potassium ratio about the plasma membrane towards normal, but with lower total values, only when the loss from the body is slow. This is suggested by experimental findings that rapid potassium loss frequently produces weakness or paralysis that is seldom seen when the loss is slow,[25] and the importance of the rate of potassium depletion in producing weakness has also been noted clinically.[13] If function is maintained with smaller total quantities of potassium, one could expect it to be disturbed more readily than normal by such changes as respiratory acidosis or depolarizing relaxants may produce.

In the case of primary aldosteronism reported by van Buchem *et al.*[9 12] there had been no complaint of weakness despite a serum potassium level under 2 mEq/l. However, marked weakness appeared in the immediate post-operative period when serum potassium levels had been returned to normal. This may well have resulted from a state of relative hyperkalaemia in a person whose intracellular potassium had become adjusted over many years to a low serum value. The serum level is much more easily restored than the intracellular store.[26]

Therefore it would be interesting to learn whether Dr. Oldfield's case did not have a long history of developing hypokalaemia with an associated alkalosis. Indeed, this woman may have been in a state of relative intracellular potassium excess, despite a total deficiency, so that the vigorous pre-operative potassium replacement produced a patient requiring relatively large quantities of relaxant because of a curare-potassium antagonism. The muscle potassium level quoted was indeed low, and one wonders whether the biopsy specimen was not taken from traumatized muscle at the abdominal wound edge during closure of the incision. Muscle biopsy figures reported by Chalmers *et al.*[7] showed an increased chloride content; possibly this shows that the extracellular fluid space was enlarged, making the true intracellular potassium loss less than it at first appears.

The postulated penetration of the C.N.S. by curare to produce a picture of neostigmine resistance[2] might also not occur if alkalosis accompanies the potassium loss. In any

case, the brain is probably resistant to a slow potassium loss, but may be markedly depleted by a rapid loss such as could have occurred in the cases which died.[27 28] There is also evidence that mucoproteins are concerned in the integrity of the blood-brain barrier.[29 30] These substances, being constituents of collagen tissue, may have their physico-chemical characteristics influenced by adrenal steroids.[31–33] Glucocorticoids and mineralocorticoids appear to have opposing actions on glycoproteins,[16] so that the response seen in a case such as Dr. Oldfield's could well be different from that seen in the patients who slowly deteriorated and died after relaxants.

The uninvestigated problems posed by the present discussion bring one near the limits of practicable argument; but it would be a just concession to the dynamic nature of nerve and muscle function if one were to attempt to express body electrolyte levels in the ratios in which they exist about the plasma membrane, and not in total, dead, weights.—I am, etc.,

Bellville, C.P., S. Africa. P. A. FOSTER.

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Wagner-Jauregg's Symptom

SIR,—March 7 will be the centenary of Professor Wagner-Jauregg's birth. His name will for ever be remembered in connexion with the malaria treatment of general paralysis of the insane, for which discovery he received the Nobel Prize. There is also a "Wagner-Jauregg's symptom," but no record of this symptom is to be found in any standard textbook. Professor Stefan Jellinek,[1] pioneer in electropathology, who in 1904 discovered a brownish pigmentation in many cases of hyperthyroidism (Jellinek's sign), and at 86 is still doing research work at Queen's College, Oxford, described the "Wagner-Jauregg's symptom": if one exercises gentle pressure on the eyeball, the zygomatic muscle will contract, drawing the angle of the mouth upward and laterally. In a case of hemiparesis this trigeminal-facial reflex is lost and the musculature of the paralysed side of the face remains uncontracted. This symptom is especially valuable in the differential diagnosis of hysterical and organic hemiparesis of the face.—I am, etc.,

London, E.17. B. JUHN.

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Obituary

S. S. BARTON, O.B.E., F.R.F.P.S., M.R.C.O.G.

Mr. S. S. Barton, consultant in obstetrics and gynaecology to the Liverpool and the Welsh Regional Hospital Boards, died at Walton Hospital, Liverpool, on February 17 from injuries received in a motor accident near Holywell, North Wales, on February 4. He was 66 years of age.

Samuel Saxon Barton was born at St. Michael's, near Liverpool, on August 29, 1890, and was educated at Green Bank School, Liverpool, and Loretto School, Musselburgh, receiving his medical training at the University of Liverpool and at Edinburgh. He qualified by taking the Scottish triple qualification in 1917, and three years later was elected a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow. After qualification he held the appointments of house-surgeon at the Hospital for Women and house-physician at the David Lewis Northern Hospital, Liverpool, before entering the Royal Navy as a temporary surgeon lieutenant for service during the remainder of the first world war. He served in H.M.S. *Dwarf* in the waters of the Cameroons and off the west coast of Africa, being appointed O.B.E. in 1919.

After the war Barton settled in Liverpool. In addition to the work of his practice he became honorary clinical assistant at the Hospital for Women, and he also served on a medical board of the Ministry of Pensions as a specialist in tropical diseases. Later he was appointed honorary assistant surgeon to the Hospital for Women and to the Samaritan Hospital for Women. After relinquishing the latter post he was elected honorary obstetrical and gynaecological surgeon to the Hahnemann Hospital (now the Liverpool Homoeopathic Hospital), an appointment which he held until his death. When an opportunity arose to join a gynaecological and obstetrical partnership in Llandudno he gave the larger part of his medical services to North Wales and built up a large practice there. In 1933 he was elected a Member of the Royal College of Obstetricians and Gynaecologists, and in 1941 became consultant in obstetrics and gynaecology to the Liverpool and Welsh Regional Hospital Boards. His wife, Dr. Dorothy Atherton Barton, and three sons survive him.

H. R. writes: Saxon Barton will be remembered particularly as an antiquarian and as an able artist in oils and water colours. At the Royal Cambrian Academy of Art he founded a prize awarded annually to encourage young artists to exhibit their work. A recognized authority on King Richard III, he founded the Fellowship of the White Boar (the Plantagenet coat-of-arms), and, as president of the society in 1934, erected a stained-glass window in Middleham Church, Yorkshire, to commemorate the last of the great Plantagenets. His latest ambition was to erect a monument to Richard III in Bosworth Field. Barton was also a former president and secretary of the Historic Society of Lancashire and Cheshire, and a Fellow of the Society of Antiquaries of Scotland, and published several works on the subject of antiquities.

W. H. WILSON, D.M.

The obituary of Professor W. H. Wilson was printed in the *Journal* of February 16 (p. 406).

B. G. P.-S. writes: Everyone knew him in Mataria, so we had no difficulty in finding his house in a street named in Arabic after him. We turned, leaving all the dust behind

us, into a large, cool, leafy green garden reminiscent of England in high summer. It was 1942, and we had come to discuss a question of physiology with him in his capacity as consultant adviser to the R.A.F. The front door of his house was opened to us by his English parlourmaid, who had been with him for over fifty years and who was dressed in the style of her Victorian counterpart. In the peaceful atmosphere of an English drawing-room we discussed our problem with him over tea, home-made thin white bread-and-butter, china tea from a silver teapot, which he replenished with hot water from a silver urn heated with a methylated burner. He was then 76 and as alert as ever. We could never forget being transported from Egypt in wartime to a little piece of England for those few hours. What he had brought into this small Egyptian town in the way of English medicine and an English way of life was so obviously appreciated by the local population and is now irreplaceable.

KATHLEEN O. VAUGHAN, M.B.

Professor W. C. W. NIXON writes:

I first met Dr. Kathleen O. Vaughan (whose obituary was published in the *Journal* of January 26) in the late 'thirties after her return from Bordeaux, where she had been given facilities to investigate the effect of posture and prenatal exercises on the process of birth. During her years in Kashmir she spent much time in the study of the ill-effects of the purdah system on the course of pregnancy and parturition and compared these with the easy deliveries among the boat-women who led an active life throughout pregnancy and who adopted the squatting posture during labour. The prenatal exercises which she later evolved and which form the basis of present practice were the direct outcome from her observations of these women. Her views were coldly received in her own country, but in the U.S.A. and Continental countries they were accepted and her precepts put into practice. I was happy to be able to give her opportunities in the maternity departments of St. Mary Abbots and Paddington Hospitals (London County Council) to establish antenatal classes and to supervise women in labour. Her presence and the establishment of these classes created a new and happy atmosphere in the antenatal department. Mothers looked forward to their visits, and the clinics were no longer monotonous treadmills with their frustrating effects on mothers and medical attendants. Many mothers have expressed their gratitude for the help given them by this wise, kind, and courageous doctor. Those of us who are responsible for the care of expectant mothers should salute one who has made a major contribution to the enlightened attitude towards childbirth which now exists not only in this country but in those countries where Dr. Vaughan worked.

Dr. T. COURTENAY CLARKE, who was for many years senior honorary physician to the Liverpool Chest Hospital, died suddenly on January 11 from coronary thrombosis. He was 73 years of age. Thomas Courtenay Clarke was born on May 8, 1883, the son of Dr. Thomas Clarke, and was educated at Liverpool College, graduating M.B., Ch.B. from the university in 1911. As a young man he was a keen footballer, playing for Cheshire. After holding the appointments of senior house-surgeon at the Stanley Hospital, Liverpool, and resident medical officer at Crumpsall Infirmary, Manchester, he joined his father in a large family practice in Liverpool, and soon afterwards was elected to the staff of the Consumption and Diseases of the Chest Hospital (now the Liverpool Chest Hospital) as pathologist and medical officer. He retired as senior honorary physician to the hospital some six or seven years ago. Between them, father and son gave over 80 years of outstanding service. Twice married, he is survived by his widow, five sons, and three daughters, to whom our sincere sympathy is extended.

Dr. R. STOPFORD-TAYLOR writes: It was during the first world war, when Dr. Courtenay Clarke—popularly known as "T.C."—was serving with the 1st West Lancs Field Ambulance (T.A.)—later known as the 87th Field Ambulance of the 29th Division—that one fully appreciated his fine character. He was utterly fearless, and his devotion to duty made him a tower of strength at all times. He underwent a knee operation to fit him for service overseas, and a few months later was wounded in the sound knee. On his return to the unit, although limping, he insisted on doing front-line work, and later was wounded twice more. In 1917 he was awarded a well-earned Military Cross, and attained the rank of lieutenant-colonel. He displayed the same high qualities during the heavy bombing of Liverpool in 1941 during the second world war. He was a delightful character, and a hospital colleague described him as the straightest man he had ever met. The large congregation at the funeral service was evidence of the high esteem and affection in which he was held.

Mr. H. B. WALKER died at Minehead, Somerset, on January 25 at the age of 70. Harry Bertram Walker was born in Yorkshire on February 28, 1886, and lived in Whitby until he entered the London Hospital Medical College in 1905. There he had a brilliant career. He won the chief entrance science scholarship, and then with remarkable regularity carried off almost every prize as it became due. His friends and rivals could only express surprise that the examiners had chosen the right man every time. He took the London Conjoint diploma in 1911, the London degrees of M.B., B.S. in 1913, and the F.R.C.S. in 1916. After qualification he held house appointments at "The London," Poplar Hospital, and Bristol Royal Infirmary, and was a demonstrator of physiology under Sir Leonard Hill, joining in many of his researches. He was ever ready to be an experimental animal himself, as, for instance, when he was deeply anaesthetized so that the relative advantages of different methods of resuscitating the apparently drowned could be tested on an unconscious person. He served in both world wars. In the first he immediately volunteered in 1914, began as a regimental medical officer, and won the Military Cross in 1915 for gallantry before being transferred to a base hospital as a surgical specialist. In the second he was a surgical specialist and in charge of a surgical division in West Africa. His main interest was in surgery, but in 1919 he joined a practice in Minehead. He was elected an honorary surgeon to the Minehead Hospital, which was fortunate to secure the services of so highly skilled a person for its staff. His work there was admirably summed up in the *West Somerset Free Press*: "He died inside the hospital he had so loyally, nobly, and somehow humbly served for nearly 36 years." He took a very prominent part in the affairs of Minehead. Among his numerous activities he was president of the local branch of the British Legion for many years, and he had also been president of the Rotary Club. A man with very wide interests and extensive knowledge, he was a delightful companion and an entertaining and witty public speaker and conversationalist with a special gift for repartee, but this was always kindly and usually the victim was the person most amused. He could, however, be quite devastating when dealing with humbug or pretentiousness. Outstanding among his characteristics were his absolute integrity, professional and personal, and his physical and moral courage. His main defect, if it can be so described, was his excessive modesty, which led him persistently to underestimate his abilities and to undervalue his achievements. Generous in mind and generous in act, he held a unique place in the affection of his friends.—C. B.

Dr. RUTH E. CHIVERS died on January 24 at the age of 32. Ruth Eluned Lewis, who was born at Carmarthen on July 24, 1924, graduated M.B., B.Ch. from the University of Wales in 1949. Two years later she obtained the Diploma in Obstetrics of the Royal College of Obstetricians and Gynaecologists. She married Dr. N. V. Chivers in 1951,

and he survives her together with the two children of the marriage.

A. R. K. writes: Ruth Eluned Chivers was born on July 24, 1924, "on loan and to be taken great care of," as a wise minister told her parents; 32¼ years later to the day she was taken away after a very short illness. Ruth Lewis did very well at school. It seemed that, with her kind and generous nature and her love of home, she would be destined to become a wife and mother, and a domestic science course a likely step after leaving school. One day, however, she asked her father, "If one makes one's mind up to do something, could one manage to succeed?" He inquired what was in her mind, and heard how she longed to become a doctor. She had no difficulty in entering the Cardiff Medical School, and graduated in 1949. She then did two years of resident posts in Morriston Hospital, where, though happy and settled in her work, a greater happiness came to her in her meeting with Dr. N. V. Chivers. They married while they were both residents. Her husband was then called up and stationed at Lichfield. She applied for a locum post in the Birmingham public health department, and visited all of the thirty-two clinics in that area. Those days were very happy ones, and during this time she sat and passed her D.Obst.R.C.O.G. After her husband was demobilized he became an assistant in general practice in Llanelly. The Chivers now made a new venture. They took a practice in a new housing estate in Llanrumney. Only sixty of the houses were occupied at the time of their arrival, and there were only two children to come to her infant welfare clinic, but their practice prospered. A second child was born at this time. Ruth Chivers was a very active member of St. Mellon's parish church, and was on the parochial church council and treasurer of a fund for the building of a new church hall. A plaque is to be placed over the seat where she usually sat. It is very small consolation to reflect "that those whom the gods love die young"; indeed, she was rather one of those whom her fellow humans loved. She was one of those rare people of whom this was universally true, whether she was known personally or professionally. Everyone who knew her will extend their deepest sympathy to her husband, left with two tiny children, and to her parents, who have lost their beloved only child. "If she had a fault, we did not know it," her father says, "although she was my daughter." The rest of us found this true too. I knew her well during her capable house-surgeonship on the obstetric unit at Morriston Hospital, and as a wife and mother in Llanelly. She was one of those who have made the world a better place.

Medical Notes in Parliament

DOCTORS' REMUNERATION

A statement on the remuneration of doctors and dentists in the National Health Service was made by the Prime Minister on Wednesday, February 20, and a report of it appeared in later issues of last week's *British Medical Journal* (February 23, p. 471). We reproduce it verbatim here from *Hansard*, together with the supplementary questions and answers which followed both the Prime Minister's statement in the House of Commons and the Lord President of the Council's similar statement in the House of Lords.

The PRIME MINISTER, Mr. H. Macmillan, said: With your permission, Mr. Speaker, I wish to make a statement on the remuneration of doctors and dentists in the National Health Service and in the employment of local authorities.

The House will know that a claim has been submitted for an increase of 24% in the remuneration of all doctors in the National Health Service. The extra cost to the country would be about £20m. a year. In present circumstances, the Government do not feel able to admit this claim, and representatives of the profession have been so informed. This does not mean that the Government have reached any conclusion as to the merits of the claim. Indeed, they have decided that the time is opportune for a full review of medical remuneration through an independent inquiry which would take into account the position of the medical profession in relation to other professional classes in the community, and would suggest how the matter could be kept under review. I have accordingly recommended to the Queen, and Her Majesty has been graciously pleased to approve, that a Royal Commission should be appointed for this purpose. Within the last few days a claim similar to that of the doctors has been received on behalf of the dental profession, and the dental profession will be included in the review to be conducted by the Royal Commission. The question whether the remuneration of doctors and dentists employed by local authorities should be included in the terms of reference is under consideration. I will announce at a later date the names of the chairman and members of the Royal Commission, together with the terms of reference.

Mr. H. GAITSKELL, Leader of the Opposition, asked: Would the Prime Minister clarify the position? How long does he expect it will be before the Royal Commission reports? Is it to be in the nature of an arbitration tribunal which is to pronounce upon the claim? If so, are we to understand that the Government bind themselves in advance to accept whatever recommendations are made by the Royal Commission? Will the terms of reference include specialists as well as general practitioners? Finally, will it be within the terms of reference of the Commission and within its powers to recommend back-dating the award, if there is an award?

Mr. MACMILLAN said: It will, of course, be in the power of the Royal Commission to recommend that any award or any proposal should be made retrospective, but we must await the recommendations of the Royal Commission on that point. The terms of reference will include the specialists. I believe that the character of the Royal Commission will be best set out in detail when I am able to present both the names of the members and the precise terms of reference, but I think it is generally agreed that it would be a good thing if the relation of this profession with other professions could be established and if a satisfactory system could be laid down by which future reviews could be carried out from time to time. I think it would be to everybody's benefit if that resulted from the Royal Commission.

Sir IAN FRASER (Morecambe and Lonsdale, Con.) said: While welcoming this proposal, may I ask whether the remuneration of medical auxiliaries, such as physiotherapists, radiographers, and others who work so closely with the medical and dental profession, could be included in the Commission's considerations? Mr. MACMILLAN said he would prefer not to answer that to-day but would take it into account when the terms of reference were settled, for which Sir IAN thanked him.

Mr. HERBERT MORRISON (Lewisham, South, Lab.) asked: Does not the Prime Minister think that this is a very doubtful way of seeking to settle wages, salaries, and remuneration? Does it not take negotiation, from the taxpayer's point of view, out of the hands of Ministers who are responsible to the House and put it in the hands of an outside body? Is it not unlikely to lead to co-ordinated responsible decisions? Does the Prime Minister recall—I admit that this happened under the Labour Government—that the Spens Committee, dealing with somewhat similar circumstances, landed the country into an expenditure and into repercussions which were very embarrassing?

Mr. MACMILLAN said: This is a very difficult problem, but I feel that the work of the Royal Commission on the Civil Service, which is not quite similar but is somewhat parallel, has been an advantage. Again, it was a question in which Ministers were finally responsible, as they will be in this matter, but I think that it has been an advantage in the general life of the Civil Service. If some equally good results followed from this Royal Commission, I think it would be generally acceptable.

Mr. G. NABARRO (Kidderminster, Con.) said: While wishing warmly to congratulate my right hon. Friend, may I ask him to make it perfectly clear, in framing the terms of reference for the Royal Commission, that a primary purpose should be to endeavour to eliminate all the legal and other uncertainties which have arisen during the last few years from the Spens Report and the Danckwerts award made under it, all of which are responsible for the present difficult position with the doctors?

Mr. MACMILLAN answered: One of the purposes of the Royal Commission will be to clear up this situation and to lay down a system which, through the years, will be more workable and more acceptable.

Dr. EDITH SUMMERSKILL (Warrington, Lab.) asked: As this is virtually a repudiation of the recommendations of the Spens Report, could the Prime Minister say what was the reaction of the professional organizations towards this new suggestion?

Mr. MACMILLAN said: No, sir. The discussions between the representatives of the profession and the Minister of Health are another matter. To-day, I have simply preferred to confine myself to stating that I have recommended the appointment of the Commission, that Her Majesty has been pleased to accept the recommendation, and that the terms of reference and the membership will be announced. I think that all the detailed questions had better be put to the Minister responsible.

Statement in House of Lords

After Lord SALISBURY (Lord President of the Council) had given to the House of Lords the same statement as the Prime Minister gave to the House of Commons, Lord ALEXANDER OF HILLSBOROUGH (Lab.) said: My Lords, I am much obliged to the noble Marquess the Leader of the House for making here on behalf of the Government the statement that is now being made by the Prime Minister in another place. I must say that the first impressions of this statement upon me are not very cheerful. Having regard to the long, outstanding application of the great profession of medical men and women to the State service, I feel it is extraordinary that, after this length of time, the question of their remuneration should be referred to a Royal Commission. That is a most extraordinary procedure to adopt. It was only last week that the noble Marquess, in that very difficult hour when he performed so brilliantly at the Box, said how much he deprecated the long delays and the odd form of inquiry which would be brought about by applying a Royal Commission to such a comparatively simple question as the roads in Oxford. Here we are dealing with something which is urgent, outstanding, and necessary to retain the good will of the medical profession in maintaining a great national service to the people. To me, it seems like cowardice on the part of the Government for them not to deal with, and decide their policy upon, what is an urgent matter. Instead of that, they refer it to a Royal Commission.

There was no such reference to a Royal Commission, no such delay, before the Government made the statement in the other place the other day about the increased costs of welfare milk and the weekly contribution of the worker to the Health Service as there is going to be in regard to the remuneration of the doctors. There was no sort of cowardice or hesitation in referring that matter to a Royal Commission. Those are people of a different type. But here it looks as if the medical profession may be "got at" with a view to putting up with a Royal Commission. Having regard to his former association with the great medical profession, no doubt the Chancellor of the Duchy of Lancaster will be busy trying to spin the necessary story of glamour to his professional colleagues. I only hope that the country will take as strong and as sincere a view about this sort of thing as I do myself.

The MARQUESS OF SALISBURY said: My Lords, if the noble Viscount the Leader of the Opposition was asking a supplementary question, it is what I might call a rhetorical question. He referred—I rather expected he would refer to it—to a debate which took place last week on the Oxford roads, in which the Government rejected the idea of a Royal Commission. The noble Viscount must remember that the circumstances were entirely different in that case, as I explained—or, at least, I hoped I had explained—to the satisfaction of the House. There was in existence under the Town and Country Planning Act alternative machinery which was already in operation, and the fact that it was a very limited question—a limited problem, as the noble Viscount has said—made it easy to use that machinery. This is a very wide and complex question. I would remind the noble Viscount that I said in the statement I have just made:

> ". . . the time is opportune for a full review of medical remuneration through an independent inquiry which would take into account the position of the medical profession in relation to other professional classes in the community."

That is, indeed, one of the great problems which has to be faced. It is no good the noble Viscount and others saying that the medical profession can be dealt with entirely in isolation; it cannot be done. This is one of the most complicated questions that exist, as I know from my connexions with the research bodies in this country, and it is an eminently suitable question to be dealt with by a body of this kind.

Viscount ALEXANDER OF HILLSBOROUGH asked: How long did it take the Government to discover that this was so complicated a question in comparison with others? For months and months this matter has been under discussion with the medical profession, and it has certainly been within the knowledge of the Ministry of Health from the moment the State scheme was launched. Now, at this stage, when the doctors are in a very poor position—at least, some of them are—in relation to the increasing cost of living, that they should be dealt with by means of a Royal Commission seems to me almost unthinkable. Will the noble Marquess say whether, while the Royal Commission is sitting, any adjustment is going to be made to ease the position of the doctors?

The MARQUESS OF SALISBURY: My Lords, I think I can say something about that. I understand that my right honourable friends the Minister of Health and the Secretary of State for Scotland have told the doctors and dentists that they are willing to agree to the granting of an interim increase to the junior hospital medical and dental staff. This is on the basis that they can justifiably be regarded as underpaid at present. The offer will be negotiated through the established Whitley machinery. It will not be extended beyond this limited class to, for example, the lower-paid general-practitioner doctors or dentists; it is meant to apply to those who are in most need at the present time.

Lord WILMOT OF SELMESTON (Lab.) said: My Lords, in view of what the noble Marquess the Leader of the House says, and in my view rightly says, about the bearing on research workers, may I take it that consideration of those bearings will be included in the terms of reference of the Royal Commission?

The MARQUESS OF SALISBURY answered: My Lords, the actual terms of reference I hope to be able to announce later. As I have said, anything which is done with regard to doctors and dentists has a bearing on these wider categories, though, obviously, there is a limit even to the subjects with which a Royal Commission can concern itself. But there are categories outside the limits of such terms of reference which have a bearing on the recommendations which such a Commission could make.

Lord AMULREE (Lib.) said: My Lords, I thank the noble Marquess for the statement he has made. I must agree that the questions raised by the medical profession have been going on for a long time, and I hope that the Royal Commission will now settle them quickly. Secondly, I very much hope that the position of local-authority doctors and dentists, which the noble Marquess states is under consideration, will come under the terms of reference of the Royal Commission. We were told during a debate on the Oxford roads that some Royal Commissions could report in six months, while others might take six years. This is a

matter of some urgency, and I trust that in this case the period will be one of six months and not a longer period.

The MARQUESS OF SALISBURY said: My Lords, the period which the Royal Commission will take is a matter for the Commission. Her Majesty's Government desire, as much as the noble Lord, that it shall be as rapid and efficient as possible in its work. With regard to the other question, perhaps the noble Lord will allow me to let him know exactly what will be included within the terms of reference when I am able to do so. I will certainly bear in mind the point that he has made.

Lord CONESFORD (Con.) said: My Lords, may I ask my noble friend whether, in settling the terms of reference of the Royal Commission, he will consider the advisability of making them wide enough to enable the Royal Commission to compare, not only professional earnings as between different professions, but professional earnings with non-professional earnings? The MARQUESS OF SALISBURY said there had to be some limitation of the terms of reference, even of a Royal Commission.

Viscount ALEXANDER OF HILLSBOROUGH said: My Lords, on this important matter we should be glad to know the date by which we may have the terms of reference and (although this is a question we may then ask) how long the Royal Commission will sit. This is such an extraordinary announcement that we should be informed of these terms of reference as soon as possible.

The MARQUESS OF SALISBURY said: My Lords, I can assure the noble Viscount that we will let him know as soon as we are in a position to do so.

Antidote to Nerve Gases

Mr. S. AWBERY (Bristol, Central, Lab.) asked the Minister of Supply what experiments had been made at the Chemical Defence Station, Salisbury Plain, on the use of atropine as an antidote to nerve gases; what was the purpose of these; to what extent volunteers were used for the experiments; and what proposals he had for issuing this drug to soldiers to be used for self-injection. Mr. W. J. TAYLOR, the Parliamentary Secretary, replied that comprehensive experiments had been carried out over a number of years by the Chemical Defence Experimental Establishment to assess the value of atropine as an antidote against nerve gases and to determine the tolerance of effective dosages by men. The results of these trials, which included experiments with volunteers, had been published in the scientific press from time to time. No decision had yet been taken to issue this drug to soldiers for self-injection.

Benefit for Respiratory Disease

Dr. BARNET STROSS (Stoke-on-Trent, Central, Lab.) asked the Minister of Pensions and National Insurance whether he would pay benefit under the Industrial Injuries Act to those who suffered from respiratory disease as a result of living in areas where the atmosphere was heavily contaminated by commercial processes. Mr. J. BOYD-CARPENTER replied on February 18 that the proposal, which raised wide questions, went far beyond the provisions of the Industrial Injuries Act, 1946.

Alcoholic Psychosis

Mr. SOMERVILLE HASTINGS (Barking, Lab.) asked the Minister of Health on February 22 for an estimate of the number of cases of mental disease admitted into hospitals under his direction during 1955 in which alcohol was the principal or contributory cause, respectively. Mr. D. VOSPER stated that during 1955 there were 1,053 admissions to mental hospitals which were recorded as principally due to alcoholic psychosis or alcoholism. No estimate could be made of the number of admissions to mental hospitals in which alcohol was a contributory cause.

Homicide Bill

The House of Lords accepted without a division, but not without dissent, the Homicide Bill on second reading on February 21. The MARQUESS OF SALISBURY, for the Government, said it was hoped the House would not wish to make any drastic amendments, but any that were proposed would be considered on their merits, and the Government were free to accept any which they considered would be an improvement in the Bill. Lord GODDARD, the Lord Chief Justice, indicated during the debate that he would call attention in committee to some drafting difficulties; and Lord SILKIN expressed the Opposition's hope that it would be possible to "improve" the Bill along the road to complete abolition of capital punishment.

Lung Cancer

Mr. SOMERVILLE HASTINGS (Barking, Lab.) asked the Minister what communication he had received from the Standing Medical Advisory Committee or the Central Health Services Council as to the relationship between cigarette smoking and cancer of the lung, and as to any action to be taken accordingly. Mr. VOSPER replied that at their meetings in December last these bodies repeated the advice already given to his predecessor. Like him, he proposed to ensure that the public were kept informed of all relevant information as and when it became available.

Health Service Cost

Mr. ARTHUR LEWIS (West Ham, North, Lab.) asked what was the total cost of the Health Service in 1950 and at the latest convenient stated date respectively; and, taking the pound sterling as having a purchasing value of 20s. in 1950, what was the relative purchasing value of the current National Health charge compared with 1950, after allowing for the depreciation of the purchasing value of the pound sterling. Mr. VOSPER told him that the total cost of the Health Service in 1949–50 was about £450m., of which £345m. was met by the Exchequer. The corresponding figures estimated for 1957–8 were about £690m. and £550m. respectively. The equivalent of these latter figures in terms of the purchasing value of the pound in 1949–50 (measured by the estimated change in the Consumer Price Index between 1949–50 and December, 1956) were about £515m. and £410m.

Whitehaven Hospital.—The Minister of Health has authorized the regional hospital board to proceed with the site works for the new hospital at Whitehaven. The total estimated cost of the hospital is £2,500,000, and plans for the first stage are nearing completion.

Hospital Confinements.—During 1955 the number of institutional confinements in England and Wales was 440,857, which was 64.75% of the total.

Universities and Colleges

UNIVERSITY OF OXFORD

The following have been reappointed University Demonstrators from October 1, 1957, to September 30, 1962, in the subjects indicated in parentheses: Dr. R. Barer (Human Anatomy), Dr. J. M. Walker (Pharmacology), Dr. E. M. Vaughan Williams (Pharmacology), Dr. D. S. Parsons (Biochemistry), Dr. D. J. C. Cunningham (Physiology).

Dr. D. St. C. Roberts has been reappointed Clinical Tutor in Ophthalmology and Dr. G. M. Ardran radiologist at the Nuffield Institute for Medical Research, both from October 1, 1957, to September 30, 1962.

In Congregation on January 24 the following degrees were conferred:

B.M.—G. R. Pate, D. A. Wheelwright, D. W. Boyd, P. Owen-Lloyd, Jennifer L. Murray, H. M. Williams (in absence).

UNIVERSITY OF ST. ANDREWS

The following candidates have been approved at the examination indicated:

M.B., B.S.—I. M. Aitkenhead, L. R. Butler-Manuel, D. C. Crawford, R. A. Haddow, P. Hossen, M. J. Illingworth, *D. W. Jervis, J. L. Maddison, J. P. M. Penney, D. J. Sutherland, *T. T. Thompson, H. E. G. Thomson, Mrs. Elinor M. Whyte.

In absentia.

UNIVERSITY OF GLASGOW

On January 7 the degree of M.D. was conferred, *in absentia*, on the following candidates: [2]D. I. Buchanan, [2]M. B. Divertie, J. M. Smith, [2]C. M. Wylie.

The following degrees were conferred on January 12:

M.D.—[1]Mary G. Coyle, [2]Margaret M. Kerr, [1]R. Lannigan, [2]C. J. Mackinlay, [2]R. G. Whitelaw.

M.B., Ch.B.—A. V. Anderson, A. Auld, Evelyn F. Barclay, H. Bart-Planze, J. Caplan, B. C. Colvin, A. H. Frame, S. MacF. Garrett, D. S. Gilchrist, H. K. Gooding, J. C. Gray, A. Hare, Moira B. M. Hendry, T. P. Howat, Christine M. Hyslop, Anne P. Johnstone, J. Lee, J. W. Little, W. MacDonald, R. E. McIntosh, G. D. Mackenzie, D. G. Muirhead, A. M. Orr, T. Orr, M. C. G. Rennie, A. E. Roberts, A. P. Scott, R. G. Stark, Helen J. Stewart, P. M. Stoker-Murdy, Seana R. Sutherland, G. J. Thomson, R. J. Wylie, W. J. Young.

[1]With high commendation. [2]With commendation.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At the quarterly comitia of the College held on January 31, with the President, Sir Russell Brain, in the chair, the death on December 20, 1956, at St. Thomas's Hospital, of the Treasurer of the College, Professor W. G. Barnard, was recorded with deep regret.

Dr. E. R. Boland, Dr. J. B. Harman, and Dr. T. C. Hunt were reappointed College representatives on the Central Medical Recruitment Committee, Dr. Janet Vaughan on the Advisory Board on Nursing Education of the Royal College of Nursing. Dr. Neville Goodman was appointed College representative at the Health Congress of the Royal Society of Health to be held at Folkestone from April 30 to May 3, 1957.

Licences

Licences to practise were conferred upon the following 84 candidates who have passed the final examination in medicine, surgery, and midwifery of the Conjoint Board and who have complied with the by-laws of the College:

K. A. Anderson, E. L. R. Andrews, M. V. R. Appa Rao, J. B. G. Arthur, P. Atkins, S. E. Augusit-Moffatt, A. G. Barrow, E. E. Bassey, G. P. E. Beaney, P. G. Benson, G. T. Birchall, A. J. Blakeman, J. J. B. Brand, T. J. Carter, J. V. F. Catto, A. M. A. Clark, C. Cook, E. J. Coomey, Mary Corbett, Barbara C. Dean, I. E. Doney, J. I. Edwards, M. W. Everitt, K. Finney, A. F. Fleming, M. E. Gloster, W. I. M. Goodrick, C. J. Goodwill, Z. Grahovac, B. J. G. Greenhill, Jean A. Hagger, D. W. Hall, T. L. R. Hall, Rosalie M. Harrison-Bloom, Veira F. A. Hauxwell, L. P. J. Holt, Y. E. Hsia, C. M. Jadwat, P. Knight, Audrey M. Lake, C. W. London, Patricia O. Lane, Jean C. Le Riche, I. Lewis, W. J. Lush, I. McColl, C. A. G. Mackenzie, K. P. Mehta, A. H. Miller, C. P. Monty, D. R. Morgan, E. B. Morgan, B. R. P. Murray, Norma G. Newbury, Lotte T. Newman, J. D. J. Parker, P. C. C. Pitt, D. R. Potter, Sheila M. Power, Edna O. S. Renwick, R. B. Roberts, David S. Robertson, Donald S. Robertson, Charmian A. Russell, R. de K. G. Samuel, T. D. Sayer, J. H. Scotson, Mary P. Shepherd, I. D. Simpson, J. F. Tattersfield, S. G. Taylor, J. G. Teall, J. A. P. Trafford, J. Tudor, Joyce Warner, C. Wastell, B. Weinstein, W. M. Weir, P. S. Welch, P. B. Whatmore, S. R. Williams, Susan M. Wilson, T. Woodward, A. J. Zuckerman.

Diplomas

Diplomas in Laryngology and Otology, in Anaesthetics, in Psychological Medicine, in Tropical Medicine and Hygiene, in Pathology, and in Medical Radiotherapy were granted, jointly with the Royal College of Surgeons of England, to the successful candidates whose names are printed below in the report of the meeting of the Royal College of Surgeons of England held on January 10.

Diplomas in Medical Radiodiagnosis were granted, jointly with the Royal College of Surgeons of England, to B. W. A. Leeming and to the other successful candidates whose names are printed below in the report of the meeting of the Royal College of Surgeons of England held on January 10.

The following diplomas were granted jointly with the Royal College of Surgeons of England:

DIPLOMA IN CHILD HEALTH.—Uda S. Ellis, C. G. Gallagher.

DIPLOMA IN INDUSTRIAL HEALTH.—D. R. Belletty, D. E. Marchant, R. G. Orr, J. S. Robertson, F. G. M. Seager, O. P. Verma.

DIPLOMA IN PUBLIC HEALTH.—H. Banerjee, E. E. Bowen, Seonaid C. Cameron, J. C. Chakrabarti, D. M. Digues La Touche, C. P. A. Dupont, C. B. Higgie, C. D. Hopkins, W. G. J. Hughes, I. Khan, Audrey J. Lacey, Hilda E. McNamara, R. K. Mukhopadhyay, W. L. Palmer, Brenda K. Rimmer, M. Ryan, S. W. Smith, R. A. Stenhouse, I. O. Taylor, R. W. Watton, P. A. C. Wright.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of the Council of the College held on January 10, with Sir Harry Platt, President, in the chair, Mr. A. C. McEarchern (Adelaide) was awarded a Hunterian Professorship.

A diploma of Fellowship was granted to W. G. Lucas.

The following diplomas were granted, jointly with the Royal College of Physicians of London:

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.—M. A. K. Afridi, J. A. Coombes, J. T. Dunn, J. A. Fajemisin, T. Fazlcabas, Hla Saw Khine, C. M. Jain, J. McKenzie, A. G. May, N. R. Sarkar, S. Sarkar, P. A. Shah, E. G. Weyhausen, M. Y. Wipat.

DIPLOMA IN ANAESTHETICS.—D. A. L. Ashforth, Anne Bewley, P. Borg, Brigid M. J. Brenfan, J. F. Burdon, J. K. A. Burn, Rhoda M. R. Burt, G. H. Bush, M. P. Cardew, W. B. Chamberlain, J. Chari, Elizabeth F. H. Clarke, E. M. Coates, R. A. Davidson, W. MacF. Davidson, D. S. Dick, Diana F. J. Duncan, Barbara C. Edwards, L. Essex, J. N. T. Evans, Phillida M. Frost, M. R. Golin, Joyce Y. Graham, J. O. Hancock, Maureen E. Hardeman, Margaret A. Hayes, Catherine Henderson, June R. Hill, Mary G. C. A. Hunter, Ruth Hutchinson, D. S. Hutton, Mary C. Irvine, J. M. James, W. H. James, Elsie Jaques, S. G. Jones, Lila Kalappa, A. N. Kalra, A. McL. Keil, R. Kelly, F. M. Kinsman, Margaret A. Lawrence, Julia I. Leitch, A. B. Lodge, Joyce B. H. Longmore, Krystyna M. Lubomirska, G. W. Macnab, A. S. Manavalan, G. C. Mansfield, M. B. Marshall, Renate M. Meyer, N. K. Misra, D. D. Moir, A. Moore, D. K. Mukherji, M. Muneeruddin, Sandra Murdoch, D. B. Murray, K. L. Naidoo, R. C. Nainby-Luxmoore, F. Nimri, G. K. Nixon, J. S. Ogilvie, R. C. Oliva, J. G. Opie, B. G. Pirie, Caroline R. F. Port, C. H. Pryor, Marion G. Ralston, Margaret E. Riddoch, E. D. T. Ross, H. N. Sadhu, G. Screech, B. C. Sengupta, J. G. Sheehy, F. B. Singleton, A. J. Slim, W. D. A. Smith, Isobel Speirs, Joan M. M. Sutherland, R. C. Taylor, E. M. Thomas, R. V. Ll. Thomas, R. A. Truesdell, M. Urshan, L. Walker, D. A. Walmsley, P. T. Watters, K. P. Williams, E. G. Wilson.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—P. J. F. Aaronricks, P. T. Annesley, Elizabeth Arkle, J. C. Barker, A. C. Barry, A. A. Bartholomew, Marie L. S. Beesley, S. McC. Cannicott, N. S. Capstick, Cho-Man Chung, Brigid M. R. Clark, M. J. Craft, P. J. Dally, R. Davidson, J. E. Dessart, M. Evans, R. B. Finn, D. Gough, A. M. Gregory, Isobel H. Hunter, D. C. W. Jenkins, R. E. Lovelace, A. McClelland, J. S. Madden, R. Morgan, A. Orwin, Shera Samaraweera, G. Stroh, J. D. Waldman, E. D. West, V. O. Williams, M. E. Y. York-Moore.

DIPLOMA IN MEDICAL RADIO-DIAGNOSIS.—A. T. Abdel-Messieh, W. M. C. Allen, A. E. Ambrose, S. N. Banerjee, S. Banerji, J. H. Comty, F. H. Doyle, G. J. H. Everard, T. B. Forrest, D. G. Garrow, N. Haiazonetis, M. J. Harman, A. H. Isaacson, D. C. James, B. Lall, S. Nissanga, A. A. Potasnick, W. T. Rothman, T. Selvarajah, F. W. G. Snell, S. A. Sobhan, J. A. M. F. Veiga-Pires, A. C. Young.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—B. K. Basu, R. L. Bell, J. P. Crowdy, E. J. F. De Oliveira, D. S. R. Gunawardane, S. T. Hasan, J. G. P. Power, W. T. Richardson, R. R. Sidesky, R. C. Watson.

DIPLOMA IN PATHOLOGY.—H. N. Dutta, S. Hameed, J. T. Hughes, A. J. Lewis, J. G. Paranjpe, R. A. Rimington.

DIPLOMA IN MEDICAL RADIOTHERAPY.—I. G. Emmanuel, W. E. Freeman, N. Gupta, H. Horwitz, S. F. Huq, Elizabeth M. Kingsley Pillers, R. Ll. Morgan, D. L. Phillips, T. K. Rithuparnan, A. D. Shetty, H. D. Suit.

Vital Statistics

Influenza in Armed Forces

The only notable outbreaks of influenza so far this winter have been in Service units. An outbreak of virus A influenza has occurred in the R.A.F. at Halton, Bucks, and small outbreaks are reported from Army units at Chelsea and Wellington Barracks, at the Tower of London, and in two training units at Rhyl, Flintshire. Virus isolated so far has been of the Dutch 1956 group.

Week Ending February 16

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 830, whooping-cough 3,163, diphtheria 2, measles 19,710, acute pneumonia 676, acute poliomyelitis 37, dysentery 1,274, paratyphoid fever 6, and typhoid fever 1.

Infectious Diseases

In England and Wales during the week ending February 9 the largest rises in the notifications of infectious diseases were 3,744 for measles, from 13,008 to 16,752, 193 for dysentery, from 1,097 to 1,290, and 59 for acute pneumonia, from 661 to 720; the only large fall was 154 for whooping-cough, from 3,302 to 3,148.

The largest increases in the incidence of measles were 501 in Lancashire, from 2,937 to 3,438, 382 in London, from 971 to 1,353, 348 in Durham, from 1,088 to 1,436, 343 in Essex, from 1,113 to 1,456, 231 in Northumberland, from 734 to 965, 197 in Surrey, from 525 to 722, 175 in Yorkshire West Riding, from 755 to 930, 151 in Middlesex, from 501 to 652, 146 in Gloucestershire, from 220 to 366, and 135 in Staffordshire, from 386 to 521. The largest fluctuations in the trends of whooping-cough were a fall of 90 in Kent, from 250 to 160, and a rise of 45 in Sussex, from 55 to 100. The notifications of scarlet fever numbered 869, 4 more than in the

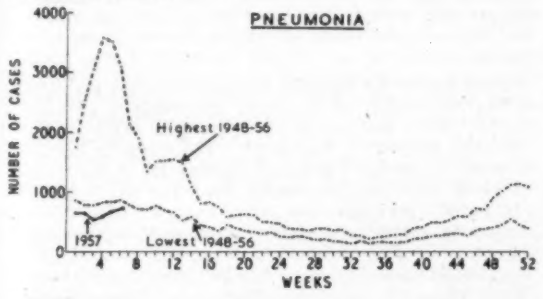
preceding week, and there were no large fluctuations in the local returns. 9 cases of diphtheria were notified, being 4 more than in the preceding week; 2 of the cases were notified in the metropolitan borough of Islington.

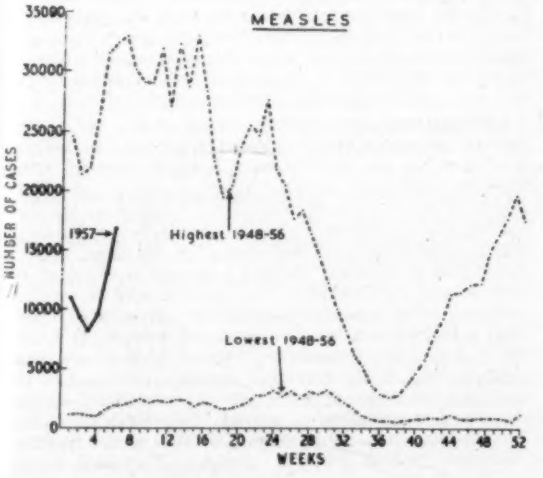
34 cases of acute poliomyelitis were notified during the week, and these were 7 fewer for paralytic and 4 more for non-paralytic cases than in the preceding week. The largest returns were London 8 (Kensington 2), Kent 4, and Lancashire 4.

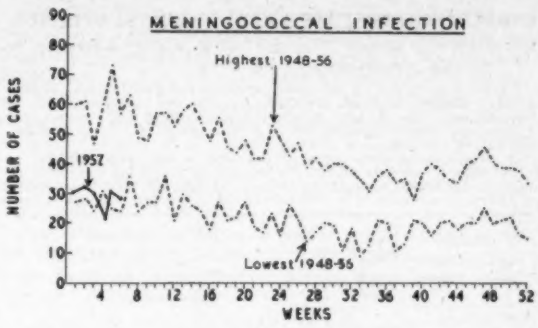
The largest centres of dysentery were Lancashire 337 (Stretford M.B. 111, Accrington M.B. 106, Droylsden U.D. 15, Urmston U.D. 15, Blackburn C.B. 10), Yorkshire West Riding 174 (Rotherham C.B. 31, York C.B. 27, Dewsbury C.B. 24, Leeds C.B. 20, Bradford C.B. 17, Sheffield C.B. 15), Warwickshire 75 (Coventry C.B. 38, Birmingham C.B. 18, Nuneaton M.B. 12), London 67 (Chelsea 22, Hackney 15), Durham 61 (Gateshead C.B. 22, Blaydon U.D. 14), Yorkshire East Riding 51 (Kingston-upon-Hull C.B. 26, Haltemprice U.D. 25), Northumberland 50 (Blyth M.B. 23, Alnwick U.D. 22), Nottinghamshire 45 (Arnold U.D. 25, Nottingham C.B. 15), Surrey 40 (Mitcham M.B. 17, Surbiton M.B. 12), Staffordshire 38 (Kidsgrove U.D. 13, Stoke-on-Trent C.B. 11), Essex 38 (East Ham C.B. 13, Chigwell U.D. 10), Glamorganshire 35 (Cardiff C.B. 13, Rhondda M.B. 13), Bedfordshire 32 (Luton M.B. 30), Middlesex 31 (Hayes and Harlington U.D. 14), Wiltshire 27 (Calne and Chippenham R.D. 19), Berkshire 21 (Wokingham R.D. 13), and Leicestershire 20 (Hinckley U.D. 10).

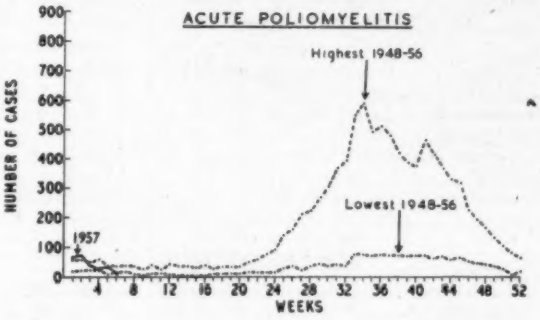
Graphs of Infectious Diseases

The graphs below show the uncorrected numbers of cases of certain diseases notified weekly in England and Wales. Highest and lowest figures reported in each week during the years 1948–56 are shown thus - - - - - -, the figures for 1957 thus ———. Except for the curves showing notifications in 1957, the graphs were prepared at the Department of Medical Statistics and Epidemiology, London School of Hygiene and Tropical Medicine.









Drinks and Smokes

Since the end of the second world war the consumption of beer in the United Kingdom has tended to decline slightly, while that of spirits has risen. The amount of tobacco consumed has steadily increased from 1947–8, though without yet reaching the figure for 1946–7. The Table below gives details. The figures are from the *Forty-Seventh Report of the Commissioners of Her Majesty's Customs and Excise for the Year Ended March 31, 1956* (H.M.S.O., 7s. 6d.).

Year	Beer Brewed in U.K., Bulk Barrels* (Millions)	Spirits Retained for Consumption, Proof Gallons (Millions)	Tobacco Retained for Consumption, lb.† (Millions)
1946–7	29·23	9·99	255·57
1947–8	30·01	9·98	211·79
1948–9	27·05	8·91	212·33
1949–50	25·76	9·77	213·19
1950–1	24·75	11·40	214·88
1951–2	24·67	9·67	218·81
1952–3	24·39	10·22	220·11
1953–4	24·20	10·64	224·22
1954–5	23·61	11·51	232·43
1955–6	24·12	12 35	239·26

* 1 bulk barrel = 36 gallons (164 litres). † 1 lb. = 0·45 kg.

The consumption of sugar, both home-grown and imported, has also increased in the last decade, as the following Table shows. Figures are given in the same Table to show the great increase in use of heavy fuel oils by road vehicles.

Year	Sugar Retained for Consumption, Cwt.* (Millions)	Heavy Fuel Oil for Road Vehicles, Gallons† (Millions)
1946–7	32·76	147·60
1947–8	37·72	175·30
1948–9	37·73	200·39
1949–50	39·05	230·15
1950–1	39·65	259·33
1951–2	40·43	283·79
1952–3	38·71	294·88
1953–4	41·48	321·86
1954–5	47·12	364·26
1955–6	47·60	421·07

* 1 cwt. = 50 kg. approx. † 1 gallon = 4·5 litres.

INFECTIOUS DISEASES AND VITAL STATISTICS

Summary for British Isles for week ending **February 9** (No. 6) and corresponding week 1956.

Figures of *cases* are for the countries shown and London administrative county. Figures of *deaths* and *births* are for the 160 great towns in England and Wales (London included), London administrative county, the 17 principal towns in Scotland, the 10 principal towns in Northern Ireland, and the 14 principal towns in Eire.

A blank space denotes disease not notifiable or no return available.

The table is based on information supplied by the Registrars-General of England and Wales, Scotland, N. Ireland, and Eire, the Ministry of Health and Local Government of N. Ireland, and the Department of Health of Eire.

CASES in Countries and London	1957					1956				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria ..	9	2	1	0	2	8	0	3	0	10
Dysentery ..	1,290	67	213	7	1	1,336	152	134	21	3
Encephalitis, acute	5	1		0		0	0		0	
Enteric fever:										
Typhoid ..	6	1	0	0		2	0	0	0	
Paratyphoid ..	5	0	2(B)	0		5	0	0	0	
Food-poisoning ..	165	31	60	1		121	14		0	
Infective enteritis or diarrhoea under 2 years				16	28				6	16
Measles*	16,752	1353	504	505	301	2,889	51	63	17	98
Meningococcal infection	28	2	10	3	1	37	4	14	1	2
Ophthalmia neonatorum	29	2	7	0		18	1	2	1	
Pneumonia† ..	720	58	270	59	2	1,176	68	422	16	10
Poliomyelitis, acute:										
Paralytic ..	21	5	3	1	9	19	2	4	0	2
Non-paralytic ..	13	3				7	1			
Puerperal fever§ ..	222	45	9	0	1	266	55	8	3	
Scarlet fever ..	869	62	74	35	26	961	44	89	30	24
Tuberculosis:										
Respiratory ..	666	86	121	16		667	63	114	23	
Non-respiratory	75	6	21	5		83	7	14	3	
Whooping-cough..	3,148	164	423	14	44	1,285	69	90	103	225

DEATHS in Great Towns	1957					1956				
	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire	Eng. & Wales	Lond.	Scot.	N. Ire.	Eire
Diphtheria ..	0	0	0	0	0	0	0	0	0	0
Dysentery ..	0	0		0		0	0		0	
Encephalitis, acute		0			0		1			0
Enteric fever ..	0	0	0	0		0	0	0	0	
Infective enteritis or diarrhoea under 2 years	8	0	0	0	0	6	0	0	0	0
Influenza	11	2	1	0	0	82	8	17	0	1
Measles		0	0	0	0		0	0	0	0
Meningococcal infection		0	0				0	2		
Pneumonia ..	299	43	20	11	12	549	76	55	11	10
Poliomyelitis, acute	4	0			0	4	0			0
Scarlet fever ..		0	0	0	0		0	0	0	0
Tuberculosis:										
Respiratory ..	62	6	10	2	0	87	19	19	4	7
Non-respiratory		2	0	0	1		1	1	0	0
Whooping-cough..	2	0	0	0	0	1	0	0	1	0
Deaths 0–1 year ..	261	38	19	10	9	274	28	37	12	22
Deaths (excluding stillbirths) ..	5,669	786	653	128	180	7,890	1130	976	128	196
LIVE BIRTHS ..	7,981	1213	1031	245	368	7,903	1130	999	195	354
STILLBIRTHS..	218	23	17			195	25	29		

* Measles not notifiable in Scotland, whence returns are approximate.
† Includes primary and influenzal pneumonia.
§ Includes puerperal pyrexia.

Medical News

Mass Radiography of Hungarian Refugees.—Mass miniature radiography of several hundred Hungarian refugees has disclosed a higher incidence of pulmonary tuberculosis than is general in Britain. The Ministry of Health has therefore advised medical officers of health to offer mass radiography to those Hungarians who are still housed together in sufficient numbers to justify a visit by a mobile unit. Hostels with a hundred or more refugees are mentioned as suitable for such a visit. For small hostels it is suggested that the refugees should go to a convenient centre. It is emphasized in the Ministry's letter, which was dated February 7, that the examination is voluntary.

Medical School at Durban.—Natal University and the local branch of the Medical Association of South Africa have protested vigorously against the Union Government's decision to remove the non-European medical school at Durban from the control of Natal University, writes the *Times* correspondent in Durban. It appears that the school is to be administered by the Department of Native Affairs. According to the *Times* correspondent, protests have been filed by the whole of Natal University's medical faculty, the heads of all the other faculties, and student bodies. The heads of faculties are reported as stating: "Assurances previously given are apparently no longer valid. At the official opening of the new medical school the present Minister of Education emphasized that the Government would not interfere with the University's development of this faculty. If transfer of control of the faculty without any consultation with the University is not regarded as interference, then moral values have little meaning." The Natal coastal branch of the Medical Association of South Africa is quoted as declining "to co-operate in any way with any authority other than the University of Natal in the staffing of the medical school." Dr. E. G. MALHERBE, the principal of the University, is heading a delegation to Mr. STRYDOM, the Prime Minister, about the future of the medical school.

Triple Course for Nurses.—A comprehensive 4-year course in nursing leading to the triple qualifications of S.R.N., Health Visitor, and Queen's District Nurse begins at Hammersmith Hospital in September. The course is described as probably the most important experiment in the training of nurses since the 1949 Nurses Act. The aim is to bring together the preventive and curative aspects of nursing by combining hospital and public health work in the training. The course will be held at Hammersmith Hospital (Postgraduate Medical School of London), Battersea College of Technology, and the Queen's Institute of District Nursing. Besides the three qualifications mentioned, the students will also take Part I of the Central Midwives Board Certificate. Candidates for this course will be required to hold a General Certificate of Education in three subjects at ordinary level and two other subjects at advanced level.

"Medical History."—The first issue of a new quarterly journal, *Medical History*, made its appearance in January. It is edited by Mr. W. J. BISHOP, formerly librarian of the Wellcome Historical Medical Library, and is the official organ of the Cambridge University History of Medicine Society, the Norwegian Society for the History of Medicine, the Scottish Society of the History of Medicine, and the Osler Club of London. Its stated purpose is to record the history and bibliography of medicine and the related sciences. The publishers are William Dawson and Sons Ltd., 4, Duke Street, Manchester Square, London, W.1, from whom it may be obtained for £2 10s. or $7.50 a year (single issues at 15s.). The first issue comprises 90 pages of text and eight full-page art plates. On the attractively designed cover is a reproduction of a miniature portrait of Thomas Linacre, inset into the binding of a book in the Wellcome Historical Medical Library. Besides six original articles,

the first issue of *Medical History* has sections headed: Texts and Documents; Society Reports; News, Notes, and Queries; Book Reviews; and Medical Anniversaries of 1957. Among the principal journals in English now current in this field besides *Medical History* are the *Journal of the History of Medicine and Allied Sciences* (New York; started in 1946), the *Bulletin of the History of Medicine, Johns Hopkins University* (Baltimore; started in 1933), *Centaurus* (Copenhagen; started in 1950), and in the *Proceedings of the Royal Society of Medicine* (London) the records of the Section of the History of Medicine which first appeared there in 1913.

Chair of Therapeutics at Belfast.—Dr. O. L. WADE, senior lecturer in medicine at Birmingham University, has been appointed to the Chair of Therapeutics and Pharmacology at Queen's University, Belfast. He succeeds Professor E. B. C. MAYRS, who is retiring. His appointment is from April 1, and the duties of the post include charge of beds in the teaching hospital. Dr. Wade is 35. He was a scholar of Emmanuel College, Cambridge, where he gained a double first in the Natural Sciences Tripos, thereafter proceeding to University College Hospital, London, where he was Acheson scholar. After a series of junior hospital appointments he became for a short time clinical assistant at the Medical Research Council's pneumoconiosis research unit at Cardiff. Since 1951 Dr. Wade has been a member of the medical professorial unit at the Queen Elizabeth Hospital, Birmingham. In 1954 he held a Rockefeller Travelling Fellowship in Medicine, which he spent with Dr. Robert Loeb and Dr. Stanley Bradley at the Columbia Medical Centre, New York. Dr. Wade's investigations have been into the haemodynamics of the pulmonary and hepatic circulations.

Empire Rheumatism Council.—To celebrate its 21st birthday the Empire Rheumatism Council has launched an appeal for £250,000 for research. The fund is under the chairmanship of Lord ASTOR OF HEVER, and the appeal is mainly being directed to industry. In a pamphlet entitled "Industry and Rheumatism," issued in connexion with the appeal, rheumatic diseases are stated to account for 10% of all working days lost through illness. In the year beginning June, 1953, 27.5 million days were lost to industry from rheumatic disorders compared with two million from industrial stoppages. Tuberculosis and bronchitis each accounted for a loss of 25.5 million days, and industrial accidents for 16 million days. These figures for illness are minimum estimates, as absences of less than four days are not included.

Poliomyelitis Research.—The National Fund for Poliomyelitis Research allocated £69,000 in research grants during the year ended October 31 last. All grants were made after consultation with the Medical Research Council. The largest grant, £50,000, was for the M.R.C. virus production laboratory at Carshalton (see *Journal*, December 1, 1956, p. 1315). The net income raised by the Fund during the year was £109,000. Further details of the Fund's work and the investigations towards which grants have been made are given in the Fund's fourth annual report. The address of the National Fund for Poliomyelitis Research is Vincent House, Vincent Square, London, S.W.1.

Deteriorated Poliomyelitis Vaccine.—A few phials of the latest batch of poliomyelitis vaccine ready for issue have been found to show signs of possible deterioration during storage. The Ministry of Health states that distribution will be deferred while the matter is investigated.

Royal College of Surgeons in Ireland.—At a ceremony held at the College on the occasion of the Charter Day dinner the College's honorary fellowship was conferred on Mr. T. J. D. LANE, visiting surgeon at the Meath Hospital, Dublin. On February 11 Mr. E. W. RICHES, of the Middlesex Hospital, delivered the second Abraham Colles postgraduate lecture. He lectured on the management of carcinoma of the bladder.

M.R.C.P. (London).—The following were elected Members of the Royal College of Physicians of London at the quarterly comitia on January 31: S. Ahmed, G. L. Asherson, N. H. Ashton, A. I. Cheyne, Etain A. Cronin, W. J. Fessel, R. F. Fletcher, G. Harris, Marion Hildick-Smith, I. A. Horton, J. W. Howie, N. L. Jones, H. Keen, L. Kreel, Lesley P. Leader, J. T. Leeming, M. H. Lees, R. D. Lele, A. H. E. Marshall, P. R. Montgomery, J. A. Parrish, K. Schwarz, E. D. Sever, T. P. Telfer, A. G. Wallace, J. C. Willan, and L. Wollner.

Consultant Haematologist to Army.—The Army Council has appointed Dr. R. BODLEY SCOTT as honorary consultant in haematology to the Army at Home, in succession to the late Sir LIONEL WHITBY.

London University.—Dr. M. J. BLUNT, senior lecturer in anatomy at St. Bartholomew's Hospital Medical College, has been appointed to the university readership in anatomy tenable there.

B.M.J. Index.—The half-yearly indexes to Volume II of the *Journal* and the *Supplement* for 1956 are now being sent to members who receive them regularly and to subscribers. Members who have not previously asked for the indexes to be sent regularly to them can obtain copies, post free, on application to the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1; those wishing to receive the indexes regularly should mention this.

COMING EVENTS

Oliver-Sharpey Lectures.—Professor J. R. SQUIRE will deliver the Oliver-Sharpey Lectures on March 12 and 14 at 5 p.m. at the Royal College of Physicians, Pall Mall East, London, S.W.1. His subject will be "The Functions of the Plasma Proteins."

Manchester University Medical Dinner.—Annual dinner on March 14 in the Manchester University Unions. Tickets, graduates 25s., from Mr. T. G. RAMSELL, Medical School, University, Manchester, 13.

Grey Turner Surgical Club.—Meeting at Leeds, March 25–27. Details from Mr. GORDON N. BAILEY, F.R.C.S., 2A, Lancaster Road, Harrogate.

NEW ISSUES

British Heart Journal.—The new issue (Vol. 19, No. 1) is now available. The contents include:

TRICUSPID INCOMPETENCE AND RIGHT VENTRICULAR OUTPUT IN CONGESTIVE HEART FAILURE. Paul Korner and John Shillingford.
DIAGNOSIS OF CONGENITAL ANEURYSM OF THE VENTRICULAR SEPTUM. Israel Steinberg.
PATENT DUCTUS ARTERIOSUS. A FOLLOW-UP OF 73 CASES. J. A. Cosh.
EFFECTS OF INTRAVENOUS DIGOXIN IN AURICULAR FIBRILLATION. John Hammond and William Whitaker.
VENTRICULAR EXTENSION INTO THE ABDOMINAL WALL. Clifford Parsons.
BAROCEPTOR RESPONSES TO ACUTE RHYTHM CHANGES. Sheila Howarth and E. P. Sharpey-Schafer.
ADRENALINE SENSITIVITY OF PERIPHERAL BLOOD VESSELS IN HYPERTENSION. Robert S. Duff.
RADIATION REACTIONS IN THE HEART. A. G. W. Whitfield and P. B. Kunkler.
ELECTROCARDIOGRAPHIC CHANGES IN HYPOTHERMIA IN MAN. Peter R. Fleming and Frank H. Muir.
EXTRA-CORPOREAL CIRCULATION AND HEART SURGERY. Ch. Dubost, R. Heim de Balsac, R. de Wall, C. Lenfant, J. Guery, J. Passelecq, M. Weiss, and J. Rouanet.
CLINICAL, PHYSIOLOGICAL, AND PATHOLOGICAL CONSIDERATIONS IN IDIOPATHIC PULMONARY HYPERTENSION. John T. Shepherd, Jesse E. Edwards, Howard B. Burchell, H. J. C. Swan, and Earl H. Wood.
IDIOPATHIC PULMONARY HYPERTENSION. Donald Heath, William Whitaker, and James W. Brown.
SOLITARY PULMONARY HYPERTENSION. William Evans, D. S. Short, and D. Evan Bedford.
TOTAL AND PERIPHERAL BLOOD FLOW IN ACUTE MYOCARDIAL INFARCTION. G. J. Lee.
THE GRAPHIC CONFIGURATION OF INNOCENT SYSTOLIC MURMURS. B. G. Wells.
CASE REPORTS:
  CONGENITAL ARTERIOVENOUS FISTULA OF THE INTERNAL MAMMARY VESSELS. B. G. Wells and R. L. Hurt.
  RUPTURE OF AN ANEURYSM OF THE RIGHT AORTIC SINUS (OF VALSALVA). Leonard Weiss.
  ANEURYSM OF AN ANOMALOUS RIGHT SUBCLAVIAN ARTERY. W. C. D. Richards and C. E. Elliott.
THE SECOND EUROPEAN CONGRESS OF CARDIOLOGY.
ABSTRACTS OF CARDIOLOGY.

Issued quarterly; annual subscription £2 2s.; single copy 12s. 6d.; obtainable from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

British Journal of Industrial Medicine.—The new issue (Vol. 14, No. 1) is now available. The contents include :

THE DANGER OF DERMATOSES DUE TO COLD-SETTING ETHOXYLINE RESINS (EPOXIDE RESINS). E. Grandjean.
DECOMPRESSION SICKNESS DURING THE SINKING OF A CAISSON. H. E. Lewis and W. D. M. Paton.
THE EFFECTS OF THE TEMPERATURES OF THE FLOOR SURFACE AND OF THE AIR ON THERMAL SENSATIONS AND THE SKIN TEMPERATURE OF THE FEET. F. A. Chrenko.
FOOT RINGWORM IN COAL-MINERS. J. C. Gentles and J. G. Holmes.
AN EXPERIMENTAL STUDY OF THE PATHOGENESIS OF SILICOTIC GRANULOMA IN THE ANTERIOR EYE CHAMBER IN RABBITS AND CHANGES IN ITS DEVELOPMENT INDUCED BY THE ACTION OF A.C.T.H., INSULIN, COMBINATIONS OF BOTH, AND SALICYLATES. Jiří Vyskočil.
THE PREVALENCE OF TUBERCULOSIS AT NECROPSY IN PROGRESSIVE MASSIVE FIBROSIS OF COAL-WORKERS. D. Rivers, W. R. L. James, D. G. Davies, and S. Thompson.
THE INFLUENCE OF THE SHAPE OF DUST PARTICLES ON THE RATE OF PHAGOCYTOSIS IN VITRO. A. Lengerová, V. J. Lenger, M. Esslová, R. Tuscany, and M. Volfová.
THE TOXICITY OF FUMES FROM A DIESEL ENGINE UNDER FOUR DIFFERENT RUNNING CONDITIONS. R. E. Pattle, H. Stretch, F. Burgess, K. Sinclair, and J. A. G. Edginton.
DELAYED DEATH CAUSED BY GASSING IN A SILO CONTAINING GREEN FORAGE. F. M. Troisi.
OBITUARY: HUBERT WYERS, M.D.
MISCELLANEA:
ASSOCIATION OF INDUSTRIAL MEDICAL OFFICERS: 21ST ANNIVERSARY MEETING.
INDUSTRIAL MEDICINE AND HYGIENE: A Review by L. G. Norman.
PERCIVALL POTT (1714-1788) AND CHIMNEY SWEEPERS' CANCER OF THE SCROTUM. John R. Brown and John L. Thornton.
MEDICAL PLANNING AT ALDENHAM WORKS.
BRITISH OCCUPATIONAL HYGIENE SOCIETY AND ERGONOMICS RESEARCH SOCIETY. D. Turner.

Issued quarterly ; annual subscription £2 2s. ; single copy 12s. 6d. ; obtainable from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

Abstracts of World Medicine.—Issued in the first week of each month, this journal contains abstracts of important papers selected from the current medical literature of the world. Annual subscription £4 4s., single copy 8s. 6d. ; obtainable from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1.

SOCIETIES AND LECTURES

A fee is charged or a ticket is required for attending lectures marked ●. Application should be made first to the institution concerned.

Friday, March 1

LIVERPOOL UNIVERSITY.—At Surgery Theatre, Medical School, 5.15 p.m., Faculty of Medicine Lecture by Dr. H. M. Sinclair: Dietary Fat and Human Disease.

Monday, March 4

MARLBOROUGH DAY HOSPITAL.—8.15 p.m., Mr. M. M. Simmons, M.A., and Dr. D. R. Davis: The Intelligent Offender: His Treatment in an Approved School.
UNIVERSITY COLLEGE LONDON: DEPARTMENT OF BIOCHEMISTRY.—At Physiology Theatre, Gower Street, W.C., 5 p.m., public lecture by Dr. G. J. Popják: Biochemistry of Fatty Acids and Cholesterol—Biological Oxidation of Fatty Acids.
●UNITED HOSPITALS CATHOLIC SOCIETY.—At 13, Devonshire Place, W., 6.15 p.m., Mr. L. H. W. Williams: Abortion.

Tuesday, March 5

INSTITUTE OF DERMATOLOGY.—5.30 p.m., Mr. B. E. D. Cooke: Disorders of Buccal Mucosa.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—3.45 p.m., Erasmus Wilson Demonstration by Dr. A. J. M. Reese: Atheroma.
ST. MARY'S HOSPITAL MEDICAL SCHOOL.—At Wright-Fleming Institute Theatre, 5 p.m., Mr. R. M. Feroze: Dysfunctional Uterine Haemorrhage.
WEST END HOSPITAL FOR NEUROLOGY AND NEUROSURGERY.—5.30 p.m., Mr. G. C. Knight: Diagnosis of Cerebral Tumours.

Wednesday, March 6

INSTITUTE OF DERMATOLOGY.—5.30 p.m., Dr. R. W. Riddell: Problems of Therapy in Fungus Diseases.
INSTITUTE OF DISEASES OF THE CHEST.—5 p.m., Dr. B. G. B. Lucas: Man and His Ventilation.
INSTITUTE OF UROLOGY.—4.30 for 5 p.m., Mr. G. F. Murnaghan: Congenital Hydronephrosis.
MIDLAND MEDICAL SOCIETY.—At 154, Great Charles Street, Birmingham, 8.15 p.m., Dr. C. G. Parsons: General Practitioner and the Chesty Child.
OXFORD UNIVERSITY.—At Radcliffe Infirmary, 5 p.m., Litchfield Lecture by Dr. P. H. Wood: Pulmonary Hypertension.
POSTGRADUATE MEDICAL SCHOOL OF LONDON.—2 p.m., Dr. R. E. B. Hudson: The Heart Septa.
ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—5 p.m., Finlayson Lecture by Mr. D. W. Currie: Results of Twenty-one Years of Surgical Treatment of Cancer of the Cervix.
ROYAL INSTITUTE OF PUBLIC HEALTH AND HYGIENE.—3.30 p.m., Dr. B. G. C. Ackner: Emotional Aspects of Bodily Complaints.
ROYAL SOCIETY OF HEALTH.—2.30 p.m., symposium by Professor A. C. Frazer and Dr. H. M. Sinclair: Composition and Nutritive Value of Flour.
SOCIETY FOR ANALYTICAL CHEMISTRY: BIOLOGICAL METHODS GROUP.—At the Feathers, Tudor Street, E.C., 6.30 p.m., discussion to be introduced by Dr. A. Spinks, Ph.D.: Experimental Assessment of Tranquillizers.
WELSH NATIONAL SCHOOL OF MEDICINE.—At Reardon-Smith Lecture Theatre, Park Place, Cardiff, 8 p.m., Sixth William Sheen Memorial Lecture by Sir Harry Platt, F.R.C.S.: Backache-Sciatica Problem.

Thursday, March 7

FACULTY OF HOMOEOPATHY.—5 p.m., Dr. A. E. Stringer: Similarity and the Synergistic Action Observed Between Hypnosis and Homoeopathy.
LIVERPOOL MEDICAL INSTITUTION.—At Liverpool University, 5.15 p.m., Joint History of Medicine Lecture by Mr. J. B. Oldham: Two Centuries Ago.
MIDLAND THORACIC SOCIETY.—At Queen Elizabeth Hospital, Birmingham, 7.30 p.m., Dr. W. W. Jones: Pneumoconiosis.
ROYAL INSTITUTE OF CHEMISTRY: THAMES VALLEY SECTION.—At Reading University, 5.15 p.m., joint meeting with Reading University Chemical Society. Professor E. J. King: Use of Enzymes in Medical Chemistry.
ST. JOHN'S HOSPITAL DERMATOLOGICAL SOCIETY.—5 p.m., symposium: Psychiatry as an Aid to Dermatology.

Friday, March 8

●INSTITUTE OF DERMATOLOGY.—5.30 p.m., Dr. P. J. Hare: clinical demonstration.
INSTITUTE OF DISEASES OF THE CHEST.—5 p.m., Air Commodore C. A. Rumball: Some Problems in Cardio-respiratory Assessment.
INSTITUTE OF LARYNGOLOGY AND OTOLOGY.—3.30 p.m., Mr. A. Radcliffe: Nasal Catarrh.
POSTGRADUATE MEDICAL SCHOOL OF LONDON.—10 a.m., Mr. S. H. Wass: Present Position of Surgery in the Treatment of Ulcerative Colitis.
ROYAL MEDICAL SOCIETY, EDINBURGH.—8 p.m., Valedictory Address by the Senior President.

Saturday, March 9

KENT PAEDIATRIC AND CHILD HEALTH SOCIETY.—At Royal Star Hotel, Maidstone, 3 p.m., Presidential Address by Mr. Richard Church: The Humble Layman.
●ST. STEPHEN'S HOSPITAL.—At Rheumatism Unit, Fulham Road, S.W., March 9 and 10, 10 a.m. each day, concentrated week-end course in the "Rheumatic Diseases."

Sunday, March 10

NORTHAMPTON MEDICAL SOCIETY.—8 p.m., Dr. D. Evan Bedford: Common Errors in the Diagnosis of Heart Disease.

APPOINTMENTS

EAST ANGLIAN REGIONAL HOSPITAL BOARD.—J. T. Bergin, M.B., B.Ch., Senior Registrar in Mental Deficiency and Child Psychiatry, Little Plumstead Hospital Group ; J. Ghoshal, M.B., B.S., Registrar in Psychiatry, Suffolk Mental Hospitals ; A. S. F. Butcher, M.B., B.Chir., Registrar in Obstetrics and Gynaecology, East Suffolk and Ipswich Area ; N. B. Das, M.B., B.S., T.D.D., Medical Registrar, Papworth Hospital ; V. J. Coffey, M.B., B.S., D.P.M., Assistant Radiotherapist, Ipswich and East Suffolk Hospital ; Wendy A. Cook, M.B., B.S., D.Obst.R.C.O.G., Registrar in Obstetrics and Gynaecology, Peterborough Group of Hospitals ; W. D. Proudman, M.B., B.S., Surgical Registrar, Ipswich and East Suffolk Hospital ; J. R. Kirkup, M.B., B.Chir., Orthopaedic Registrar, Norfolk and Norwich Hospital.

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD.—D. R. McPherson, M.B., D.T.M.&H., D.M.R.E., Consultant Radiologist, Harefield Hospital ; Judith M. Waterlow, M.B., B.S., Child Psychiatrist (S.H.M.O.), Bedfordshire Child Guidance Service ; Eithne J. O'Riordan, M.B., B.Ch., D.O.M.S., Ophthalmologist (S.H.M.O.), St. Pancras School Treatment Centre.

SOUTH-WESTERN REGIONAL HOSPITAL BOARD.—J. B. Gordon-Russell, M.B., Ch.B., M.R.C.P., D.P.M., Medical Superintendent at Roundway Hospital, Devizes ; Grace E. Woods, M.D., D.P.H., D.C.H., Deputy Medical Superintendent at Hortham Hospital, Almondsbury, near Bristol ; Marguerite A. R. King, M.B., Ch.B., Registrar in Department of Pathology at Frenchay Hospital, Bristol ; Patricia M. Russell, M.D., D.Obst.R.C.O.G., D.C.H., Registrar in Obstetrics and Gynaecology at Southmead Hospital, Bristol ; Audrey Halloran, M.B., B.S., F.R.C.S.Ed., Surgical Registrar at Gloucestershire Royal Hospital, Gloucester ; N. P. Lancaster, M.D., D.P.M., Consultant Psychiatrist at Bristol Mental Hospitals ; M. T. Stather-Dunne, M.B., B.S., Registrar in Psychiatry at the Bristol Mental Hospitals ; F. X. Borg, M.D., D.A., Anaesthetic Registrar at Southmead Hospital, Bristol ; M. G. Cox, M.B., B.Chir., F.R.C.S., Registrar in Ear, Nose, and Throat Department at South Devon and East Cornwall Hospital, Plymouth ; M. W. Reece, M.B., B.S., F.R.C.S., Senior Surgical Registrar at Royal Devon and Exeter Hospital, Exeter (joint appointment with the United Bristol Hospitals) ; C. H. Talbot, M.B., B.Chir., F.R.C.S., Senior Surgical Registrar at Southmead Hospital, Bristol (joint appointment with the United Bristol Hospitals) ; E. S. Watkins, M.D., Surgical Registrar at Weston-super-Mare General Hospital.

BIRTHS, MARRIAGES, AND DEATHS

DEATHS

Body.—On January 28, 1957, Thomas Munn Body, M.R.C.S., L.R.C.P., D.L., J.P., of 22, The Grove, Marton-in-Cleveland, Yorks, aged 80.

Daniel.—On January 27, 1957, at Essex House, Chard, Somerset, Francis Rennie Daniel, *M.C.*, M.B., Ch.B.

Hillery.—On January 20, 1957, at the Devonshire Royal Hospital, Buxton, Derbyshire, Maureen Elizabeth Hillery, L.R.C.P.&S.Ed., L.R.F.P.S., of 24, Princes Street, Bishop Auckland, Co. Durham, aged 29.

Kerby.—On January 28, 1957, at Victoria Hospital, Blackpool, Lancs, Clement Carlyon Kerby, M.R.C.S., L.R.C.P., late of Truro, Cornwall.

Lloyd.—On January 28, 1957, at Mayday Hospital, George William Lloyd, M.D., of 151, Brigstock Road, Thornton Heath, Surrey, aged 74.

Preston.—On January 31, 1957, John Alexander Preston, M.D., of Dromore, Maresfield, Sussex.

Sunderland.—On January 29, 1957, at Runcton House, Haverhill, Suffolk, Edward Benjamin Sunderland, M.R.C.S., L.R.C.P.

Walker.—On January 25, 1957, Harry Bertram Walker, *M.C.*, M.B., F.R.C.S., of 34, The Avenue, Minehead, Somerset.

Watt.—On February 1, 1957, at Drumduan, Royal Esplanade, Margate, Kent, Arthur John Watt, M.B., Ch.B., formerly of Reading, Berks, aged 75.

Wharton.—On January 29, 1957, Effie Adela Wharton, M.R.C.S., L.R.C.P., of Buckhurst Cottage, Withyham, Sussex.

Any Questions?

We publish below a selection of those questions and answers which seem of general interest. It is regretted that it is not possible to supply answers to all questions submitted.

Severe Depression during Rauwolfia Therapy

Q.—*Severe mental depression may occur during the treatment of hypertension with Rauwolfia alkaloids and ganglion-blocking compounds. Do any of the recent "antidepressive" drugs allow treatment to be continued safely? Or will changing the Rauwolfia preparation or reducing the dose relieve the depression?*

A.—Severe mental depression occurs in a small proportion of patients taking Rauwolfia alkaloids, either alone or in combination with ganglion-blocking compounds. It may occur after the administration of reserpine, rescinnamine, or mixed alkaloidal preparations. Mental depression occurs more frequently when large doses are taken. The dose of reserpine should not exceed 0.25 mg. twice daily, and the dose of rescinnamine should not exceed 0.25 mg. thrice daily. The usual dose of the mixed alkaloid preparations is 250 mg. twice daily.

When mild depression is noted another preparation may be substituted, for some patients seem less liable to develop depression with one substance than with others. If the depression persists, or if it is initially severe, Rauwolfia therapy should be stopped immediately. There is as yet no evidence that any of the agents recently introduced to combat mental depression enable Rauwolfia therapy to be continued safely, once severe depression has occurred.

Gynaecomastia from Oestrogen Therapy in Prostatic Cancer

Q.—*A patient who had a carcinoma of prostate is now stabilized on 5 mg. daily of dienoestrol after bilateral orchidectomy. He has very considerable resulting gynaecomastia which causes him physical inconvenience and much psychological distress. What treatment is advised for the gynaecomastia? The question of having the breasts amputated has been raised in this case.*

A.—The occurrence of troublesome gynaecomastia in this case raises the fundamental question how far it is necessary to supplement castration by giving oestrogens. Theoretically the latter are believed to act mainly by reducing pituitary gonadotrophic activity and to have little effect on extra-gonadal androgen production. On this assumption, if all functional testicular tissue has been removed, their value would appear doubtful. On the other hand, statistical studies indicate a significant prolongation of survival in some cases where both methods of treatment have been given, though it is not always clear from the reports to what extent and in what manner they have been combined.

It is assumed from the description of the present case that the addition of dienoestrol after castration has afforded tangible evidence of improved control. If so, it cannot lightly be discarded merely on account of the inconvenience of the side-effect produced. Breast changes during treatment are often ephemeral, however, and even with sustained dosage of a higher order partial or complete resolution may occur in due course. Failing this, the use of an alternative oestrogen such as chlorotrianisine ("tace") might be considered. This preparation has been recommended as less likely to induce gynaecomastia, although in a small series of cases treated by the writer there was no significant reduction in the incidence of this complication. Furthermore, there is some doubt whether its control of prostatic malignancy is either as positive or as rapid as with other oestrogens, and in general the liability to breast changes seems roughly related to the general efficacy of the oestrogen preparation employed. While it is thus evident that the effective suppression of prostatic cancer will in some instances be accompanied by mammary enlargement and discomfort, the latter seems a small price to pay for avoiding the dangers of active malignancy. Viewing the matter in this light may help to alleviate the patient's psychological distress, and, since any physical abnormality should be capable of easy concealment on all formal occasions, mastectomy would seem avoidable.

Control of Haemophilia

Q.—*What specific therapy is of value in the prevention and treatment of bleeding episodes in haemophilia? Is any other drug therapy of value? Claims are made for a preparation of egg white, for instance.*

A.—Haemophilia is caused by a congenital deficiency in the blood of a factor (antihaemophilic globulin) required for normal coagulation. The only treatment which can prevent or cure bleeding is the replacement of this substance in the patient's blood. The substance may be supplied by the transfusion of whole fresh blood or fresh plasma. To be effective it is necessary to use large amounts of blood or plasma. For an adult patient haemostatic levels of antihaemophilic globulin are not achieved with less than a litre of fresh plasma, and most of the activity disappears from the patient's blood in 24 hours. For this reason it is most desirable to have a concentrated form of antihaemophilic globulin. Unfortunately it has so far not been possible to make concentrated material from human blood. Antihaemophilic globulin made from animal blood has been made and used successfully for volunteers and for dangerously ill patients at Oxford,[1–4] but the material is impure and antigenic and is not available for general use.

It seems to be the general experience of medical workers that the egg-white preparation mentioned in the question has no effect on the coagulation defect in haemophilia.

REFERENCES

1 Bidwell, E., *Brit. J. Haemat.*, 1955, **1**, 35.
2 —— ibid., 1955, **1**, 386.
3 Fraenkel, G. J., and Honey, G. E., *Lancet*, 1955, **2**, 1117.
4 Macfarlane, R. G., Biggs, R., and Bidwell, E., ibid., 1954, **1**, 1316.

Medico-Legal Aspects of Artificial Insemination

Q.—*If artificial insemination with husband's semen is to be undertaken, what precautions should the doctor take to guard himself against subsequent medico-legal difficulties? Is it essential, for instance, to obtain written permission from both husband and wife, and is it necessary to establish the origin of the semen in any way? Should it be established, before carrying out the insemination, that the wife is not in fact already pregnant?*

A.—It is certainly necessary to exclude pregnancy so far as possible, especially if the insemination is intracervical. In practice this means paying attention to the date of the last menstrual period and restricting insemination to the fertile period—that is, avoiding the premenstrual phase.

The medico-legal aspects of insemination with the husband's semen only will be considered here, *not* those where the donor is some other person. The procedure is probably then to be regarded as any other operation or treatment, the parties being protected by the usual laws relating to negligence and malpractice. There might, however, be difficulty in establishing the origin of the semen for certain. If the specimen is presented to the doctor by the husband himself, and especially if it is collected on the doctor's premises, it seems reasonable to assume that it has been obtained from the husband and not from someone else. The temperature and viscosity of the specimen might be confirmatory evidence of the time of collection: it takes approximately half an hour for semen to liquefy and to become homogeneous.

In view of the possible ethical if not medico-legal difficulties, most general practitioners avoid procedures of this kind and, when such treatment seems indicated, prefer to send their patients to a gynaecologist or to an infertility clinic. If the general practitioner in this case decides to proceed with artificial insemination he would be well advised to: (*a*) Obtain from the patient and her husband a document signed by both, giving consent to the operation. This document should clearly state the nature of the operation, the reasons for it, *and the origin of the semen* to be used. (*b*) Only carry out the operation in the presence of a third party, preferably a nurse. After the operation the nurse should be asked to sign the document of consent. (*c*) Keep a careful record of the details of the procedure.

Painless Local Analgesia

Q.—*Is there any completely painless way of administering a local analgesic? I need such a method to allow the insertion of needle electrodes into children for electromyography. Is there not an instrument for giving subcutaneous injections that dispenses with the need for a needle?*

A.—A subcuticular skin weal can be raised quite painlessly. A syringe is fitted with a fine, short-bevel hypodermic needle. The flat of the bevel is placed against the skin, and while the local analgesic solution (which must be isotonic) is gently forced out through the needle the point is slid under the cuticular layer. A tiny white bleb appears without any pain. Through this bleb a heavier gauge needle can be passed painlessly. Confirmation that the method is painless can be obtained by doing it on one's own arm. The success of this method in children will naturally depend on how well the administrator can prevent any fear or strain on the part of his young patient.

The instrument for giving subcutaneous injections without a needle is the "hypo-spray" described by R. A. Hingson.[1] The solution to be injected was contained in a small round-nosed metal ampoule with a tiny orifice of about 75 microns diameter. A powerful spring inside the instrument generated a pressure sufficient to force the liquid in the ampoule through the tiny orifice and through the skin into the subcutaneous tissues. The injection, though very nearly, was not always entirely painless. In addition, unless the instrument was held absolutely still the tiny puncture in the skin might be converted into a slit. So far as is known, neither the instrument nor the necessary ampoules were ever made available on the British market.

REFERENCE

1 Hingson, R. A., *Anesthesiology*, 1949, **10**, 66.

Urinary 17-ketosteroids

Q.—*What is the normal range for urinary 17-ketosteroids in men and women, respectively? In what clinical conditions does the information gained from this estimation justify its use?*

A.—The normal range for 17-ketosteroids in the urine differs in the two sexes, owing to their being derived partly from adrenal cortical sources and partly from testosterone in the testes. Slight differences in the normal range depend upon differences in the techniques used for analysis. The most generally used technique gives values for men of 8–23 (average 14.5) mg. daily and for women 5–18 (9.5) mg. daily.

The commonest causes of elevation of these values are certain adrenal cortical tumours and the prepubertal virilizing syndrome associated with hyperplasia of the adrenal cortex. Low values may be obtained in a variety of non-specific chronic disease processes and in myxoedema and anorexia nervosa. Particularly low levels are found in women with Addison's disease, and to a less extent in men because of the presence of functioning testes. In well-established hypopituitarism a value of only 1 or 2 mg. per day is often found in either sex. The subject has been recently discussed in *Clinical Pathology in General Practice* (1955; B.M.A., London).

NOTES AND COMMENTS

Dental Caries During Pregnancy and Lactation.—Dr. B. J. BOUCHÉ (London, S.W.19) writes: Your expert's answer to the question on dental caries during pregnancy and lactation ("Any Questions?" January 26, p. 239) does not appear to be complete or comprehensive. The questioner asks what "dietary supplements" are advised during pregnancy and lactation to prevent dental caries in the ordinary case, but your expert talks only about supplementing the intake of minerals, which he states is unlikely to prevent caries of the mother's teeth. Is it not true to say that the enamel ameloblasts and dentine odontoblasts take up calcium and phosphorus from the maternal blood to make enamel or dentine in the developing foetus and for this vitamins D, A, and C are all necessary? Can it not be imagined that if antenatal care does not provide these items adequately the result may be disastrous for both mother and baby? In addition to pregnancy and lactation, would it not be reasonable to add prolonged illness also when such a need must be met?

OUR EXPERT replies: Dr. Bouché is quite correct in thinking that, if an antenatal diet does not provide adequate amounts of calcium, phosphorus, and vitamins A, D, and C, the result may be disastrous for both mother and baby. The teeth, however, would be one of the structures least likely to be affected in such a disaster. It would also be correct to add vitamins A, D, and C to the list of dietary supplements which have been tested for power to protect teeth against caries and found ineffective in adults. The only dietary agent to date which has been clearly shown to protect against caries is the fluoride ion, and it would have little effect on the mother, as its protection appears to be conferred during the period when the teeth are calcifying.

Local factors seem to be of more importance than systemic ones in causing caries. The best advice that can be given to prevent dental caries in the ordinary case is to pay regular attention to cleaning the teeth and to have the dental practitioner attend to any particular places in the mouth where food debris might stagnate. This need for oral hygiene is particularly important in pregnancy in view of the possibility of pregnancy gingivitis causing tender gums and so discouraging the use of the toothbrush. It is also of great importance in illnesses where the natural cleansing action of saliva may be lost owing to impaired function of the salivary glands.

Flowers in the Sickroom.—Dr. GEORGE GRAHAM (London, W.1) writes: Your expert has given the reasons for thinking that it is unnecessary to remove flowers from the sickroom because they excrete carbon dioxide at night ("Any Questions?" January 26, p. 239). But he does not offer any explanation for this widespread belief which few nurses would dare to brave. Many years ago I had a patient with asthma who had to be discharged from the ward because he said that flowers caused his attacks. I suspect that this happened to someone many, many years ago, and that the authorities at the time did not know that the pollen of some flowers caused attacks of asthma in some patients. They knew that flowers gave off carbon dioxide at night which they thought, very foolishly, was harmful, and banned all flowers from all sickrooms irrespective of whether the patient had asthma or not. This belief causes much unnecessary work for the nurses who have to remove the flowers, which in some cases are very numerous, to draughty corridors and bathrooms. This change of temperature and the knocking about which the flowers and plants receive may damage them. I hope your expert's authoritative answer will stop this practice, but I fear the belief is too ingrained in nurses and all nursing authorities to be stopped by any explanation.

Correction.—In the letter on methyltestosterone therapy by Drs. S. Oleesky and D. S. Munro (*Journal*, February 16, p. 404) the word "linguets" should have been in quotation marks to indicate that it is a registered trade mark, used by Ciba Laboratories Ltd.

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GENERAL MEDICAL SERVICES COMMITTEE

The General Medical Services Committee of the B.M.A. met on February 21 at B.M.A. House, with Dr. A. TALBOT ROGERS in the chair. The Committee spent the whole day discussing the position arising out of the rejection by the Government of the profession's claim for an increase in remuneration.

Mr. Harry Cooper

The CHAIRMAN referred to the death of Mr. Harry Cooper, and paid a tribute to the accuracy of his work in reporting the Committee's proceedings and those of its predecessor, the Insurance Acts Committee, for the *British Medical Journal* for so many years. The last occasion that Mr. Cooper attended a meeting was in November last.

REMUNERATION CLAIM

The CHAIRMAN, reporting on the interview between representatives of the Negotiating Committee and the Minister of Health on February 20, said that the deputation had had a very disturbing day. He agreed with Dr. Wand's view that in all his years of negotiations with different Ministers he had never met with such a stubborn and blank refusal to listen to the profession's point of view.

The Government had refused to consider the merits of the claim at all. The Minister during a two and a half hours' discussion was driven at one time to admit that there was justice in the doctors receiving something further for their services, but in spite of that the Minister kept harping on the economic situation of the country, and because of this the Government could not look at the merits of the claim.

When the deputation entered the Minister's room, Dr. Rogers continued, it knew nothing about the proposed Royal Commission. "We reacted unanimously and strongly against the whole idea of a Royal Commission, pointing out the many disadvantages. We asked that the Joint Chairmen should be able to see the Prime Minister, and that was refused."

Announcement of Royal Commission

The announcement of the Royal Commission was made in Parliament in such a way as to suggest that by this means the Government was really offering something worth while for the future. In effect, said the Chairman, the present claim had not been considered, and would not be considered until the Royal Commission had sat and deliberated as long as a Royal Commission might deliberate. The Minister was asked why the Royal Commission could not look at the future methods of payment while in the meantime an adjudicator was appointed to decide the merits of the case and allow of some adjustment of doctors' remuneration within a reasonable time and which could, if necessary, be readjusted after the Royal Commission had reported. That was said to be impossible. The terms of reference of the Royal Commission were not yet known, but it appeared that it would be asked to look at the method of payment of doctors and the level of their payment in comparison with other professions.

Departure from Spens

This, said the Chairman, was departing a very long way from Spens. The Spens Agreement covered two things. The first was the alteration in the value of money. The Minister said that this would not be mentioned in the Royal Commission's terms of reference, but if and when the Association gave evidence before the Commission it could bring forward arguments on the change in the value of money. Secondly, Spens was concerned with changes in the remuneration of other professions, and if it could be shown that other comparable professions had gained on the medical profession it was a strong argument for adjustment. There was no suggestion, said Dr. Rogers, that that was what the Royal Commission was going to look at. It was being asked to examine the absolute incomes of the different professions, and the doctors' incomes would be compared, together with their responsibilities and training, with other professional classes, including teachers, clergymen, and other small-income groups which the Government cared to stress.

"All the things which we thought we had won through our careful work in the Spens Committee and through our subsequent explanation to Mr. Justice Danckwerts—our agreements—have gone into the melting-pot. Many questions which we thought were settled, and which we have fought to retain as rights, will have to be considered *de novo*." The dependence of the Pool upon the number of doctors would have to be considered again, Dr. Rogers continued. The whole machinery of the Central Pool would have to be reconsidered.

The Minister had admitted that the Royal Commission would not necessarily recommend an increase in doctors' remuneration. It might quite well be that there would be a recommendation in the opposite direction.

Whitley Machinery

Sir Russell Brain, continued the Chairman, was concerned about the question of negotiation under Whitley B. At the present moment, although there were grumbles about the Whitley set-up, it contained one very important provision

which often worked against the profession, but occasionally could be made to work in its favour, and that was that unless there was complete agreement in Whitley B the *status quo* continued. Unless both sides agreed, a matter could not be taken to arbitration, and therefore the present consultant remuneration, including the merit award system, was bound to go on if consultants wanted it to do so. In answer to a question from Sir Russell Brain, the Minister had said that the Whitley machinery would be washed out if the Commission so reported.

There was no guarantee that the Government of the day, probably not the present Government, would accept the Commission's advice. The Minister had said he could not commit his Government or any other Government to accept beforehand any finding of the Royal Commission. Royal Commissions were set up to advise the Government, and the Government decided how much of the advice was acceptable, or how much was practical in the circumstances then obtaining. The addendum to the Prime Minister's statement, arising out of a question from Mr. Gaitskell, that the Commission would be empowered to advise retrospective payment was of little value. The Government could say that the economic climate was such it could not afford to give £60m. or whatever it was to adjust doctors' back claims.

Grave Warning

It was a very grave note he was sounding, said the Chairman, but it had to be sounded. This was no way for a reasonable government to suggest settling a pay claim.

The Royal Commission's remit was being extended to include the pay of public health medical officers and dentists. In the public health officers and dentists, two of the most controversial sections of the whole Health Service were being brought in, both of whom had considerable problems to solve. The consideration of these problems would add months, if not years, to the work of the Commission.

There was one other point, Dr. Rogers added. The Government was willing to help, in advance of the Royal Commission's findings, the junior hospital staffs, which meant staff up to and including the rank of senior registrar. The delegation took the attitude, and the Minister agreed, that this was a separate matter from the setting up of a Royal Commission.

JUSTICE IN THE CLAIM

Dr. S. WAND, Chairman of Council, said that, without going into the history of the happenings yesterday, there were perhaps two points he could mention. One was that he asked the Minister, if the economic climate was the same when the Royal Commission reported as it was to-day, would the findings be implemented? The Minister had replied that if the economic climate was the same "we would have to consider that." It was clear from this that if the economic climate was the same the report, even if it was accepted, might not be implemented. The second point was that towards the end of the meeting the Minister had said that no one could dispute that there was justice in an increase for the doctors. "I took that up and said, 'Minister, I have copied this out and I am going to quote this, but I want to be sure that I have this right . . . do you agree that you said that?'" The Minister, said Dr. Wand, tried to side-step by saying that some such words would appear in the statement in the House. But, since these words were not included in the statement in the House, he felt justified in quoting them.

"When I came away from that meeting," went on Dr. Wand, "I was as angry as I have ever been after a meeting with any Minister. The discussion that we were expecting to have with the Minister did not take place. He presented us, as you have seen from this morning's papers, with a *fait accompli*. What does that mean? It means that the Government is going to use . . . a particular type of weapon with which to destroy all that has gone before. The Danckwerts award was made by an independent judge, and the Royal Commission is the one method which the Government can use to destroy that by its own nominees and with terms of reference which no one can discuss except the Government itself."

The Commission would be a very long-standing one, while we had no guarantee that its report would be implemented if it was in the profession's favour; if it were not in the profession's favour it was obvious that the Government would want to implement it. Had the profession any guarantee that the Royal Commission would not recommend a full-time salaried service?

Broken Pledges

"We came into this service," continued Dr. Wand, "with certain pledges and promises; we accepted them because they came from a British Government. Supposing the Royal Commission finds in our favour and suppose the findings are accepted, can we rely on those promises? (No.) I am going to ask you, and this is a very serious question, that we have to consider very carefully, not merely whether we can go on working for such an employer now, but whether we can go on working for such an employer in the more distant future. The whole basis on which doctors enter service of this kind depends on trust. Can we any longer trust the Government? If we cannot trust the Government it is not a matter of resigning now, it is a matter of saying we will have nothing to do with any service which is run by any Government. That is, as I see it, the issue before us. The issue is no longer one only of remuneration for the immediate future. Even if the Government gives us our 24% we have still got to consider very carefully whether any professional person can work for a Government which can behave in this fashion."

In the Discard

Dr. A. B. DAVIES said that little remained to be added. There had been no negotiation at all. The Government would not listen to the claim, they had indicated that they never would; there had been no suggestion of arbitration, either on the money or an interpretation of the back promises, no adjudication on Spens or Danckwerts or any of the understandings on which they came into the Service; there had been no consultation—they were told that it was never the custom to consult a negotiating body on setting up Royal Commissions.

"All this means, as Dr. Wand had said, that everything that we ever had, anything that we ever won, anything that was ever agreed on coming into the Service is now in the discard. That means Spens, that means Danckwerts, even Whitley. There is no promise that our claim will ever be considered, although the Minister admits there is some justice in it." The only thing which came out of it, which was quite separate from the claim, was the indication that the Management Side of Whitley would be advised to consider the claim of hospital staffs up to the rank of senior registrar.

The CHAIRMAN said that it was interesting that the Minister said "that the Government was willing to instruct," giving away the fact which had always been disputed, that that was exactly what the Government did, it instructed the Management Side of Whitley.

Dr. DAVIES said that one satisfactory thing was that the public health officers would be considered in the constellation of medicine.

The Negotiating Committee

Dr. H. GUY DAIN asked what happened at the Negotiating Committee which met in the afternoon.

The CHAIRMAN replied that it was determined at that meeting that without any avoidable delay all the different constituents of the Negotiating Committee, the G.M.S. Committee, and the Joint Consultants Committee, should discuss the matter and decide what their views should be. The

Negotiating Committee had no longer the task of negotiation; there was no one to negotiate with. When the Council of the Association met next week it was hoped that the views of the different constituent bodies would be available to it. When the Council met the Guild met; the Council could constitute itself into the Guild.

The Negotiating Committee had decided that a letter should be sent to the Prime Minister, signed by Sir Russell Brain and himself, which would be in the form of an appeal to the Prime Minister, even at that last moment, to do something. Nothing could be done about the Royal Commission, but the intention was to suggest that the Royal Commission should be more concerned with the basis of doctors' pay rather than the amount. It was felt that the two issues could still be separated, and that when the terms of reference of the Commission were announced they could be directed to the future rather than to the present. It might still be possible, if the Government wished, for the profession's present dissatisfaction to be referred to an arbitrator. That was the note which would be sounded in the letter to the Prime Minister.

Repudiation of Spens

Dr. H. N. ROSE asked if it was understood that the Government did not repudiate Spens until the Royal Commission reported.

The CHAIRMAN replied that the Government had said all the way through that the Spens Report was a suggestion as to how they should start in the Health Service, and that it did not have any continuing validity. Up to now the Government had said that the Spens recommendations were one of the things which should be taken into consideration when assessing the future, but yesterday they could not even get that, there was no suggestion that the word "Spens" would appear anywhere in the terms of reference of the Commission.

Dr. ROSE asked if it should be taken then that the Government had abandoned Spens and repudiated it.

The CHAIRMAN replied that they had repudiated it entirely, and the representatives of the profession when they gave evidence before the Royal Commission must say that this was where they came in and ask the Commission to agree with its interpretation and reject the Government interpretation.

Dr. O. C. CARTER, a member of the Negotiating Committee in 1948, said that Spens meant far more than remuneration to general practitioners. He could not see any virtue in a Commission, because if the Government dishonoured Spens it could still more easily disregard the findings of a Commission. There were other things which might come in, such as a State-salaried service.

The Platform

Dr. WAND said that they must decide on what platform they were going to fight. The platform should be the simple fact "that we ask for adherence to Spens by the Government by agreement or arbitration. The Government having agreed that, we will consider with the Government the question of looking into the whole structure of the National Health Service." He would throw that out for discussion. He did not attach himself to it completely, but he put it forward to get something concrete; "our demands are the adherence to Spens, brought up to date by agreement or arbitration. If the Government showed that they were willing to keep to their bargain by doing that, we can proceed to discuss with them any further step which may be required to follow."

On the question of propaganda, now was the time to make it clear that sooner or later this must be taken out of party politics altogether. It seemed to him that a good deal of the attitude of the present Government was based on a fear of controversy in the House and repercussions from the Opposition. On the other hand, if the Opposition got back into power the profession could not expect to get much help from it, and therefore the only way to get a health service which would be satisfactory was to make it clear to the population at large that it must be divorced from political control—that is, Parliamentary control—so that no party came into it, and now was the time to start that.

Dr. STEVENSON, in response to a question from Dr. WAND, produced a letter from Sir William Douglas written on May 2, 1950, which stated "that the Minister agrees that the Spens Report remains the basis of remuneration of general medical practitioners until such time as after the usual consultation some other basis is found."

Dr. J. C. ARTHUR said that this went beyond Spens. All Spens did was to fix the social status of the doctor in 1939, and that was reaffirmed in 1948. That was the point on which they were slipping, and if that could be got over to the profession they might be stimulated to do something effective. The social pattern was changing, and in that lay the very grave danger of this Royal Commission. They were liable to be judged by other professions, and some of these other professions had for many years been envious of the doctor. . . . That was where Spens and Danckwerts had been so important; they had held them up, and he thought that it must be made clear to all the profession that what they were fighting for was not the immediate award but their status in comparison with other professions. If they lost now, they were lost for ever, they would drop in the social scale, and if that could be got over to the profession clearly and simply they would respond to an appeal to do something really drastic.

Action

The Committee then proceeded to discuss what action it should take. After a debate, in which nearly every member of the fully attended meeting joined, it was decided, with only two abstentions, that an emergency Conference of Local Medical Committees should be called in April, and that it be recommended to the conference that general practitioners should be advised to resign from the Health Service unless the Government agreed to an immediate and satisfactory settlement of the profession's claim or to arbitration.

A proposal that general practitioners who were members of administrative bodies should be advised to cease co-operating in the administration of the Health Service was not agreed to as a matter for immediate action, but as one which should be considered at the appropriate time.

The Committee set up a small subcommittee to prepare as a matter of urgency an alternative scheme for the organization of general practice outside the N.H.S.

The following statement was issued by the Committee at the conclusion of the meeting:

"The General Medical Services Committee, representing some 21,000 family doctors in the National Health Service, has learned with anger and resentment of the Government's cynical disregard of the Committee's just claim for an adjustment in remuneration, the level of which has not been changed since April, 1951. Not only has the Government clearly repudiated its obligations, but, by the appointment of a Royal Commission, it has destroyed the very basis upon which the profession agreed to enter the National Health Service only nine years ago. Indeed, as recently as 1950, an assurance was given by the Ministry of Health that 'the Spens Report remains the basis of remuneration of general medical practitioners until such time as after the usual consultations some other basis is substituted.' The Government, by appointing another body without any form of consultation, has committed a flagrant breach of trust which creates a position totally unacceptable to the profession.

"Thus the profession is in the position that, after waiting six years for the Government to implement its pledge to alleviate the effects of the steady decline in the value of its remuneration, it now faces a further and indefinite delay. It is difficult to believe that any other section of the community would be expected to submit to such cavalier treatment and to wait for up to ten years for the effect of rising prices to be mitigated—and without any assurance that this will be the ultimate outcome.

"The Committee is therefore summoning an emergency Conference of Local Medical Committees throughout the country at an early date and is recommending to that Conference that, unless the Government agrees to an immediate and satisfactory settlement of the profession's claim or to arbitration, general practitioners throughout the country will be advised to send in their resignations from the Service. An alternative scheme for the organization of general practice will be issued at the appropriate time."

REMUNERATION CLAIM

EXCHANGE OF LETTERS WITH PRIME MINISTER

At its meeting on February 20 the Negotiating Committee authorized its joint chairmen to write a personal letter to the Prime Minister (see *Journal*, February 23, p. 471). The following is the text of the letter signed by Sir Russell Brain and Dr. A. Talbot Rogers and dispatched to Mr. Harold Macmillan on February 21.

The members of the Negotiating Committee of the medical profession at their meeting yesterday afternoon asked us, their joint chairmen, to write to you to express their profound dissatisfaction at the Government's decision on the remuneration claim which you announced in the House of Commons. The Government has refused to honour its obligation to apply the terms of the Spens Committees' reports, as interpreted by the Danckwerts award. It has thus broken its agreement with the doctors when they entered the Health Service. It has been made clear that the Government does not recognize this obligation, but the late Minister of Health, Mr. Turton, said that it would not be right for him to be judge in his own cause.

We agree that the method of adjusting medical remuneration to changing circumstances may benefit by being looked at, and if that stood by itself we should welcome the opportunity of assisting the Government in every way possible. But a Royal Commission is no answer to the present claim, and it is manifestly unfair that doctors who have had no compensation for the rise in the cost of living for six years should await the result of the slow deliberations of a Royal Commission, and meanwhile be expected to go on loyally and ungrudgingly maintaining the Health Service though their real incomes remain grievously depressed.

We therefore ask that the present dispute between us should be submitted to an independent arbitrator without delay.

Your decision causes the gravest anxiety to those who have at heart good relations between the medical profession and the Government and the welfare of the Health Service.

Prime Minister's Reply

The following letter from the Prime Minister was received by Sir Russell Brain on February 25, a similar letter being received by Dr. Talbot Rogers at the same time.

I have to acknowledge the letter of February 21 signed by yourself and Dr. Talbot Rogers regarding the difficult situation that has arisen in connexion with the remuneration of doctors in the Health Service.

Naturally I am very sorry that it has not been possible to arrive at an agreed solution of this problem. The Government feels that the Royal Commission is the only way in which a permanent system can be devised which will stand the test of time. I want to assure you that the purpose of the Royal Commission is not to waste time. On the contrary, I shall certainly urge its chairman to proceed without delay. Moreover, the work of the Royal Commission would not preclude some interim adjustment.

I must also repeat the Government's offer to deal with certain classes, that is hospital officers up to senior registrars, immediately.

While I realize the disappointment of your members at any delay I am convinced that in the long run this procedure is likely to improve the relations of the medical profession with the State and the public whom they serve so loyally.

The Scottish Association of Medical Administrators held its first meeting of the year in Stobhill Hospital, Glasgow, on February 1. The following officers have been appointed for the year: Honorary President, Sir Andrew Davidson; Chairman, Dr. S. G. M. Francis; Vice-Chairman, Dr. C. Bainbridge; Honorary Secretary and Treasurer, Dr. P. W. R. Petrie.

PUBLIC HEALTH COMMITTEE

SUPPORT FOR REMUNERATION CLAIM

The Public Health Committee of the B.M.A., at its meeting on February 22, pledged "the full support of doctors in the Public Health Service for their colleagues in general and hospital practice in the serious crisis with which the whole profession has been faced."

OPHTHALMIC GROUP COMMITTEE

The Ophthalmic Group Committee of the B.M.A. met on February 15, with Mr. O. GAYER MORGAN in the chair. The Committee spent the entire day discussing and revising the draft report of the Joint Subcommittee of the Group Committee and the Faculty of Ophthalmologists on the future of the ophthalmic services. The report will be circulated to members of the Committee in order that they can call their constituents together to obtain their comments on it in time for the Committee's meeting in May.

HOSPITAL MEDICAL STAFF

INCREASED MILEAGE ALLOWANCES

The General Whitley Council has agreed on temporary increases in mileage allowances payable to hospital medical staff and which apply to journeys made on or after December 5, 1956, and will cease when the increased customs duty under the Hydrocarbon Oil Duties (Temporary Increase) Act, 1956, no longer has effect. The increases are as follows: cars up to and including 10 h.p., ¼d. on each rate per mile; cars over 10 h.p. ¼d. on each rate per mile; motor-cycles over 150 c.c. but not more than 500 c.c., ¼d. per mile; cars and tri-cars of 500 c.c. or less, motor-cycle combinations, and motor-cycles over 500 c.c., ¼d. per mile.

MATERNITY SERVICES COMMITTEE

ROYAL COLLEGE OF MIDWIVES' EVIDENCE

In a memorandum of evidence to the departmental committee on maternity services, now sitting under the chairmanship of Lord Cranbrook, the Royal College of Midwives states its view that there should be more careful selection of general-practitioner obstetricians. To raise the standard of domiciliary maternity care to that obtaining in the best practices, all general practitioners should be required to have postgraduate experience in a maternity hospital or unit, and should attend refresher courses at regular intervals.

NORTHERN IRELAND HOSPITALS AUTHORITY

ANNUAL REPORT

No outstanding developments are recorded in the eighth annual report of the Northern Ireland Hospitals Authority for the year ended December 31, 1955. The net expenditure increased steadily and in the financial year 1954–5 exceeded £8,000,000. The scheme introduced in 1954 in which an annual block allocation of money is made to each management committee by the Authority was continued and met the approval of the committees. A slight decrease in the demands on the hospital and specialist services is reported.

Scottish News

REGISTRARS GROUP COUNCIL FOR SCOTLAND

A meeting of the Registrars Group Council for Scotland was held in Edinburgh on February 1 with Dr. HAMISH WATSON in the chair.

Great dissatisfaction was expressed with the terms of the agreement on the recent changes in residential charges for hospital medical staff, and with the fact that such an agreement had been reached without prior consultation with those most affected. It was agreed that the following resolution should be forwarded to the Chairman of the Joint Consultants Committee (Scotland) with copies to the Central Joint Consultants Committee and the Central Registrars Group Council:

That the council regrets the terms of the recently issued M.D.B. circular No. 34 on residential charges and that agreement on them was reached without adequate consultation with those who would be affected by them, and urges that early consideration be given to their revision.

Constitution of the Group

A long discussion took place on the proposals from the executive committee of the Central Registrars Group Council for the reconstitution of the Group. It was resolved that the principle be accepted that the constitution of the Registrars Group Council for Scotland be extended down to and including senior house officers. No decision was reached on the best method of ensuring adequate house-officer representation on the registrars groups. This matter was referred to the regional groups, and is to be discussed further at the next meeting of the council.

Other matters discussed were the question of hospital junior medical staff being represented on the Central Joint Consultants Committee and the Staff Side of Whitley Committee B; senior registrars undertaking domiciliary consultations when no consultant was available; and promotion prospects of senior registrars and registrars in Scotland during the next 15 years. This latter subject is to be given further consideration at the next meeting of the council.

GENERAL MEDICAL SERVICES SUBCOMMITTEE (SCOTLAND)

A meeting of the General Medical Services Subcommittee (Scotland) was held in Edinburgh on February 14, with Dr. C. J. SWANSON (Aberfeldy) in the chair.

Trainee General Practitioner Scheme

The Subcommittee considered a letter from the Department of Health suggesting that discussions might be held about the operation of the Trainee Practitioner Scheme in the light of the report of the Trainee Practitioners' Subcommittee of the G.M.S. Committee.

While appreciating that there were essential differences in the scheme in England and Scotland, the Subcommittee agreed that the report should be discussed with the Department in so far as it applies to the operation of the scheme in Scotland.

Mileage

The CHAIRMAN reported that the Rural Practitioners' Subcommittee was considering the interim report of the Mileage Committee for England and Wales, and that the Department had been asked to arrange for a meeting of the Scottish Mileage Committee at an early date to resume consideration of the position in Scotland.

Elimination of Inflation

It was reported that the liaison committee with the Scottish Association of Executive Councils had recently considered general measures to be taken to combat inflation and the proposal of the Ministry of Health to introduce an alphabetical index. The Subcommittee agreed that a meeting between representatives of the Department, the Scottish Association of Executive Councils, and the Subcommittee should be arranged to consider the situation.

Prescription Changes

The following proposal from Dundee Local Medical Committee was considered by the Subcommittee:

That the money paid for prescriptions should be returned to old-age pensioners not in receipt of supplementary pensions on presentation of receipts at the post office along with their old-age pension books.

The Subcommittee was in sympathy with the views of the Dundee Local Medical Committee, and agreed to suggest to it that, since this is a United Kingdom matter, it should arrange for the proposal to be considered at the Annual Conference of Local Medical Committees in June.

Medical Records of National Service Men

The Subcommittee considered proposals from the Department on arrangements for the custody of the medical records of men called up for National Service and for reinstatement of Service men's names on doctors' lists. The essential points of the new arrangements are, first, that when a man is called up his medical record will in future be retained by the executive council for a period of two years and three months; and, secondly, that when two years and three months have elapsed from the date when a man was removed from the list on call-up the council will write to him at the address from which he was called up, explaining to him the position regarding registration with a practitioner.

Other Items

Other subjects considered by the Subcommittee were drugs and appliances; initial practice allowances; accidents in the home; mass radiography campaigns; medical service committees and tribunal procedure; protection of practices scheme; and fees for superannuation examinations.

Correspondence

Because of heavy pressure on our space, correspondents are asked to keep their letters short.

Remuneration Claim

SIR,—There must be few doctors now who are not angry at the treatment we have received from the Government in respect of our wage claim. As far as I can judge from the information available, the Ministry more or less agrees that there is justification behind it but that the country cannot afford it. So we are to go on being exploited and, in effect, subsidizing the Welfare State. This is indeed an extraordinary relationship between employer and employee.

Of course all this dispute is only bringing to the surface the long-standing loss of confidence between ourselves and successive ministries since we were beguiled into the National Health Service in 1948. As far as the doctors are concerned, it has been a very one-sided bargain with self-restraint and self-sacrifice on our side and exploitation of our traditional loyalty on the other. A complete rearrangement of the N.H.S. is required, removing it from the intimate control of party politicians.

Our whole professional status is at stake and we have an opportunity now, as never before since 1948, to free ourselves from political serfdom. By determined action we can still preserve for the future all that is best in the tradition of medicine. Let us make sure that this time we are not diverted from our purpose by the professional politician.—I am, etc.,

Guildford, Surrey. J. S. TAYLOR.

SIR,—Yesterday the Minister of Health behaved in the way the majority of us expected. He has employed further

delaying tactics, assuming, no doubt, that politically the medical profession is unimportant and divided in its views.

The time has now come for us to unite wholeheartedly, putting aside all personal anxieties, to make it abundantly clear to the people of this country, and to the politicians, that our primary concern is not for an increase in salary but for complete reform of the National Health Service. We have a duty to those who will follow us in our great tradition to raise medicine out of the bureaucratic bog in which it is now so sickeningly floundering. We must impress upon the nation that we are above politics, and that those whose duty it is to organize and control the Health Service must be unaffected by the ebb and flow of party popularity. Our predecessors handed to us a great tradition which, owing to the conditions forced upon us by the ill-conceived Service which controls us to-day, we shall be unable to pass on to those who follow us. The era of vocation is dying; the doctor of to-morrow will be a poor descendant of the great men of the past.

Let us not talk of "striking" or refusing to sign certificates. We have one duty before us, and that is a unanimous mass resignation at once. If we delay now our chance will have gone for ever and we will be guilty of betraying all that we have inherited.—I am, etc.,

Bewdley, Worcs. DAVID E. SARGENT.

SIR,—As one temporarily exiled from my country and profession, I have followed with the greatest concern and interest the present controversy on professional–Governmental relations. From the enforced, oversimplified viewpoint of a vacuum certain facts stand out.

Our own medical politicians are also in a vacuum but through no fault of their own. This is partly because, as yet, the profession has not spoken with a single voice, and partly because the present structure of the profession makes this extraordinarily difficult on a part-time voluntary basis, when our leaders cannot get out into the highways and by-ways. This is not to be interpreted as meaning we need paid medical politicians. Most of life is a shade of grey, but very occasionally at any given moment, by the best current standards of any society, a definite black or white occurs. The profession could try to make up its mind whether this is or is not now occurring. Accepting that only those with a chip on their shoulder, like myself, write to papers, then the profession appears to be divided in this controversy into three groups: those who wish to change the health scheme; those who are concerned with remuneration; and those who see this as a breach of faith. The first thing that our leaders might do is to find out from the profession which of these points is the basic current issue. When they have discovered this, they then could discover how large a majority is of this opinion. They could then give the leadership to allow the profession to decide what action, if any, is to be taken. If action is to be taken, then more than a 51% majority is required—say 66% or 75%.

Now, depending upon what is found, action could be as follows. If we wish to change the health scheme we are not entitled to take action unless we have something better with which to replace it. Have we at the moment? If so, let us proclaim it. If not, then we should proceed as we are until we have. Then and only then is it correct to start action. Is this a remuneration claim? If it is, there is a time-honoured method for staking this—the strike. But what a time to strike. How have we been engineered into such a position at a time when the economy of our country is endangered, so that no one can look favourably on this action? In spite of all our sacrifices we still have a greater buffer of cash than most of our patients. If this is an ethical problem of professional–Governmental relations in which the Government has broken faith, we have three alternatives: accept what has occurred and adjust our future actions so that it does not occur again; let the Government have its own way continuously; or fight now. If we fight now we have decided we are dealing with a black: this must not be returned with another. This must be explained to the nation. We must establish favourable public relations and tell why and what we are going to do. Ensure that a large majority of the profession is agreed on a course of action. This might be divided into, say, three monthly time periods in which we (1) stopped writing anything, (2) worked to rule—going slow, (3) only treated emergencies. Under no circumstances could we be prepared to negotiate on this plan. If our demand had not been met at the end of a time period we would move to the next. At all costs we would have to see it through to the bitter end, unrelenting, and always explaining to the nation that this was in their benefit.

This letter may well be out of date when it reaches you, but I am willing to stake my reputation as a tipster that if this really is a breach of faith, then, because our Government are honourable men, they would give way somewhere around the introduction of the second time period. If there is no breach of faith, then we have no right to even start along this path.—I am, etc.,

Chicago, U.S.A. RICHARD G. DUNNING.

SIR,—The Minister of Health has now finally rejected the Spens recommendation and our claim for reasonable adjustment of remuneration, and as the costs of running practices are steadily rising the profession has no alternative to pressing their claim in no uncertain manner and with no more procrastination.

The Minister has prolonged negotiations with the Negotiating Committee by the age-old method of dangling a carrot before a donkey, and assuming that the medical profession was too proud and too disunited to take any drastic action. Perhaps he thought the medical profession sufficiently softened up and ready for the kill? The promise of a Royal Commission is simply a follow-up of the delay tactics which have really only been political trickery. By all means let us have a Royal Commission to get the future on a firm basis, but in the meantime an increase in remuneration for the middle and lower lists must be granted, for while Nero fiddles Rome burns. The standard of living of doctors with the middle and lower panels is rapidly going down, causing increasing financial worries, inability to afford reasonable holidays, and social anxieties and inability to educate their families to the standard of previous generations of medical men; these factors must lower the standard of general practice and of the efficiency of the Health Service.

As mass resignation from the Service involves the payment of compensation and loss of pension rights—although if the Government were so minded these matters could be held over until agreement had been reached and our resignations rescinded—perhaps the quickest and best action would be a token strike involving refusal of all certificates, except death, cremation, and certificates required for emigration. It should be made quite clear to the people that this action was made necessary by the unreasonable attitude of the Government. The action should be taken with the least possible delay, and I would suggest that April 1 be zero hour. As an interim measure by the profession to give immediate relief to the lower-income groups, I would suggest that the present loading of 500 to 1,500 be given to the first 1,000 with effect from April 1, 1957.

If adequate remuneration was given immediately and permanently to all groups of the profession, the ethics and standard of medicine would improve. If we do not succeed in our efforts now the decline and fall of the general practitioner will be well and truly launched.—I am, etc.,

Wetherby, Yorks. S. T. PYBUS.

SIR,—After attending the local meeting of the British Medical Guild we, as young practitioners, are worried about the way in which the coming crisis in the National Health Service is being handled. It seems to us that the important points are: that the Spens Reports are repudiated by the Government; that there is no method of legally forcing the Minister to abide by his agreement; and that the official B.M.A. or Guild policy seems to be that, if a large number of doctors threaten to resign from the Service, then the Government will agree to our claims and resignation will not be necessary, and that this process can be repeated every few

years. We think that this policy cannot succeed, and that the Minister has already decided to await our attempts at resignation.

It should be explained to the public that all we are asking is for the Minister to be made to keep his promises and that we want independent arbitration. We think that some sort of health insurance plan is to-day essential, and that, apart from a small section of the community, private practice is, for several reasons, now finished. As we cannot possibly in future trust any Minister's verbal promises, any doctor in the early or middle years of his career cannot hope for a reasonable future in a health scheme controlled by the Government. Therefore our only possible step is first to set up a nation-wide health insurance scheme, and after that resign from the present health scheme on the grounds that the Minister will not go to arbitration.

No doubt an alternative scheme could be made ready in a year from now. There are about 20,000 G.P.s—£10 from each one would produce £200,000, and this sum, or double if necessary, would surely provide a team of accountants, statisticians, insurance experts, etc., with enough funds to bring into effect by next January a complete scheme, preferably based on capitation payment. Possibly, just as we are about to change over to our own scheme, the Minister would offer various compromises; but the only offer we should even consider would be a legally binding contract based on the Spens Reports.

We suggest that further discussion with the Minister is useless, except, perhaps, to make the point that we think he ought to go to arbitration, but threats of resignation asking for more money do not frighten the Minister, but do antagonize the public. We ask all who are interested in a plan of this type to press for a further meeting of the British Medical Guild by contacting their colleagues locally and by writing to the B.M.A.—We are, etc.,

A. J. CLARKE. E. G. MCCLEAN
M. J. EVERTON. J. S. NELSON.
Nottingham. B. KENDRICK. N. E. STEBBINGS.

Resignation

SIR,—Two points should be considered in the event of a mass resignation of general practitioners from the National Health Service. On resignation each general practitioner who is owed his compensation money will be entitled to it. As he only gets 2½% interest, and interest rates are now about double that, it will be of great advantage to him, and each of the recipients might be willing to loan part of it to the Medical Guild. It will cost the Government about £50 million, but this cannot be helped. The other point which is not mentioned enough—and should be point one in any settlement—is no victimization. Every general practitioner who has resigned must have the right, if he wishes, to be admitted to the National Health Service in his own practice again, as he was before. This is absolutely essential and unnegotiable.

I think certificates should be given as now so that the patient does not lose. I think a fee should be charged for each service and a receipt given to the patient. Until normal service is resumed the Ministry of Health will save millions in fees, and may perhaps repay patients. Attendances will be confined to the necessary ones, and there are few who cannot afford a fee. Those who cannot will be treated as they used to be—free. Prescriptions can be issued on E.C.10 with "Executive Council" crossed out, and the problem of paying for them resolved between the patient whom it concerns and the Ministry.—I am, etc.,

Colwall. J. RICHARDSON.

Item-of-service Payment

SIR,—Now that we are to have a Royal Commission, let us hope that it will blow a breath of common sense into our affairs. Could any system of payment be more utterly absurd than the present, which rewards more work with less pay? Under the capitation system I lose money every time my telephone rings. Is it to be wondered at that most of us answer the night telephone these days with a snarl? Not only have we to suffer the discomfort and inconvenience of getting out of bed, but we actually have to pay for the privilege, and the further away the patient lives the more it costs us. Small wonder that so many of us are punished for not giving adequate attention to patients, when in fact the system actively encourages this very thing.

When the capitation system was introduced, it covered only a minority of patients. Most were still private; busy times meant more pay, not less; and we were free to make our own adjustments to the cost of living, to our patients' circumstances, and other relevant factors. In my opinion the capitation system is outmoded. It was workable when applied to a minority, but it was never meant to cover the whole population, and in making it do so we are accentuating its disadvantages, with a result which is unpractical to say the least. For goodness' sake let us have payment per item of service. The telephone will then be a merry tinkle, night calls almost a pleasure, and we shall hear no more of these miserable fines for inadequate attendance which so degrade us to-day.—I am, etc.,

E. Grinstead, Sussex. E. J. DENNISON.

Senior Registrars and Consultant Appointments

SIR,—After reading the report of the Central Consultants and Specialists Committee submitted to the Council on December 19, 1956 (*Supplement*, January 5, p. 1), I was disturbed that so little consideration was given to the question of hospital staffing, particularly the position of the senior registrars. It was evident by the remarks of Mr. E. A. Gerrard, Dr. J. G. M. Hamilton, and Mr. Dickson Wright that the Council was very uneasy about the whole situation and is looking for a lead from the Chairman of the Central Consultants and Specialists Committee. I know from experience that this Committee has always a very full agenda and often a long time is spent on trivial problems. Surely it should concentrate on really important issues.

The hospital service has come to stay, and one cannot deny that since the appointed day it has been vastly improved. Many doctors decide that they would like to make hospital work their career. They obtain a house appointment, and at the same time study for a higher diploma. They may hold an appointment of S.H.O. for one year, then become a registrar for two. The best of these obtain posts as senior registrars. Many of them have now occupied this position for four years or more and have contributed in no small way to the hospital service. What is to happen to these men? It would appear that there are not enough consultant posts to absorb them. In certain specialties not only have they acquired a knowledge of their subject but also considerable technical skill. If these appointments are to be terminated, what a loss it would be, and, indeed, after having been trained to such a high degree, they would have no alternative means of employment except in the hospital field.

It is obvious from the information which I have that many boards consider that the problem has become chronic and the retention of these senior registrars after four years is blocking the promotion ladder, and they are contemplating terminating their appointments. Surely the Central Consultants and Specialists Committee should view this with deep apprehension. It alone can give a lead to the Ministry, which I am sure is deeply concerned about the problem. A simple solution would be to absorb these senior registrars of four years or more as assistant consultants (the terms and conditions to be a subject of negotiation), and at the same time the intake of senior registrars in certain specialties should be reduced for a period of years.

I hope the Central Consultants and Specialists Committee will give its earnest attention to this pressing problem. Its remit, I would suggest, should not be confined to senior registrars alone, but should include the pattern of hospital staffing for the future. The B.M.A. is a powerful body, and if it were to give a constructive and unbiased opinion I am sure it would be treated with respect by the Ministry.—I am, etc.,

Manchester, 13. R. L. NEWELL.

BRITISH MEDICAL GUILD

BOURNEMOUTH DIVISION

At a meeting of the profession in the area the following resolution was passed unanimously: "That this meeting of the medical profession in the Bournemouth, East Dorset, and West Hants area approves and supports the action of the Negotiating Committee to obtain adjustment of the remuneration of the profession under the terms of the Spens Committees' recommendations."

ISLE OF ELY DIVISION

At a recent meeting arranged by the Division, to which all medical practitioners in the area were invited, the following resolution was passed: "That this meeting fully approves and endorses the present claim for increased remuneration for all medical practitioners engaged in the National Health Service."

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A meeting was held at the Century Hotel on February 5. Sixty medical practitioners from the area attended. The following resolution was carried unanimously: "That this meeting is unanimous in pledging its support of the Negotiating Committee and hopes that it will have strengthened that Committee's hand in taking a strong line with the Minister."

Meetings to be Held

BIRMINGHAM.—At Birmingham Medical Institute Library, 154, Great Charles Street, Thursday, March 7, 8.30 p.m.

CHELSEA AND FULHAM.—At Fulham Town Hall, London, S.W., Friday, March 8, 8.30 p.m.

ENFIELD AND POTTERS BAR (ENFIELD EAST GROUP).—At 2, Crescent Road, Enfield, Middlesex, Monday, March 4, 9 p.m.

ENFIELD AND POTTERS BAR (ENFIELD WEST GROUP).—At Cheriton, 14, The Ridgeway, Enfield, Sunday, March 3, 8 p.m.

EXETER.—At Library, Royal Devon and Exeter Hospital, Thursday, March 7, 8.30 p.m.

RICHMOND.—At Recreation Hall, Royal Hospital, Richmond, Sunday, March 3, 11 a.m.

Association Notices

Diary of Central Meetings

MARCH

4	Mon.	Alternative Edition Subcommittee, Joint Formulary Committee, 11 a.m.
5	Tues.	Editorial Subcommittee, Joint Formulary Committee, 11 a.m.
5	Tues.	Estates Committee, 11 a.m.
5	Tues.	Financial Advisory Committee, 2 p.m.
6	Wed.	Training Subcommittee, Occupational Health Committee, 10 a.m.
7	Thurs.	Ingleby Evidence Committee, 11.30 a.m.
7	Thurs.	Compensation and Superannuation Committee, 2 p.m.
7	Thurs.	Journal Committee, 2 p.m.
7	Thurs.	Charities Committee, 2.30 p.m.
8	Fri.	Full-time Non-Professorial Medical Teachers and Research Workers Group Committee, 2 p.m.
8	Fri.	Overseas Committee, 2 p.m.
12	Tues.	Amending Acts Committee, 2 p.m.
12	Tues.	Finance Committee, 2 p.m.
14	Thurs.	Ethical Review Subcommittee, Central Ethical Committee, 10.30 a.m.
14	Thurs.	International Relations Committee, 2 p.m.
14	Thurs.	Organization Committee, 2 p.m.
15	Fri.	Ophthalmic Group Committee, 10 a.m.
15	Fri.	Library Subcommittee, Science Committee, 11.30 a.m.
20	Wed.	Committee on Medical Education, 2 p.m.
21	Thurs.	G.M.S. Committee, 10.30 a.m.

Branch and Division Meetings to be Held

BARNET DIVISION.—At Middlesex Arms Hotel, Barnet By-pass, Saturday, March 9, 8 for 8.30 p.m., meeting. Short talk by Dr. Walter Hedgcock (Assistant Secretary, B.M.A.): "Recent Events." Members' ladies are invited.

BOLTON DIVISION.—At Bolton Royal Infirmary, Tuesday, March 5, 8.30 p.m., meeting in conjunction with Bolton Medical Society. B.M.A. Lecture by Dr. R. A. J. Asher: "Face Values."

BOURNEMOUTH DIVISION.—At St. Ann's Hospital, Canford Cliffs, Bournemouth, Monday, March 4, 5 p.m., psychiatric clinical meeting.

BRIGHTON AND MID-SUSSEX DIVISION.—At Hotel Metropole, Brighton, Friday, March 8, 7.30 for 8 p.m., B.M.A. annual dinner.

BROMLEY DIVISION.—At Nurses' Recreation Room, Beckenham Hospital, Wednesday, March 6, 8.15 p.m., meeting. Address and discussion introduced by Dr. R. I. S. Bayliss: "Cortisone in General Practice."

CHESTERFIELD DIVISION.—At Walton Sanatorium, Friday, March 8, 8.45 p.m., meeting. Lecture by Mr. E. A. Nicoll: "The Knee Joint."

GLASGOW DIVISION.—At Hall of Royal Faculty of Physicians and Surgeons of Glasgow, 242, St. Vincent Street, Glasgow, Thursday, March 7, 8.30 p.m., meeting. Address by Dr. A. F. Maclean: "Medical Hypnosis."

HALIFAX DIVISION.—At Board Room, Royal Halifax Infirmary, Wednesday, March 6, 8.30 p.m., meeting. B.M.A. Lecture by Professor J. M. Webster: "History of Forensic Science in Britain."

HARROW DIVISION.—At the Rest Hotel, Kenton Road, Kenton, Tuesday, March 5, 8.30 p.m., clinical meeting. Dr. Donald Hunter: "Diagnosis and Treatment of the Anaemias, including Industrial Hazards." Members of Wembley and Hendon Divisions are invited.

HARTLEPOOLS DIVISION.—At Staincliffe Hotel, Seaton Carew, Wednesday, March 6, 8.30 p.m., meeting. Lecture by Dr. M. H. Armstrong Davison: "The Maladies of Mary Queen of Scots and Her Husbands."

HASTINGS DIVISION.—At Royal East Sussex Hospital, Tuesday, March 5, 8.15 p.m. B.M.A. Lecture by Mr. A. Dickson Wright: "Vascular Disorders of the Extremities."

HOLLAND DIVISION.—At White Hart Hotel, Spalding, Friday, March 1, 7.30 for 8 p.m., supper; 9 p.m., address by Dr. Robert Forbes: "Medico-Legal Problems in Practice."

LEWISHAM DIVISION.—At Langley Rooms, the Green Man, Bromley Road, S.E., Thursday, March 7, 7.15 for 7.45 p.m., dinner dance. Members may invite two non-medical guests besides their wives/husbands and four other medical guests and their wives/husbands.

READING DIVISION.—At Large Chemistry Lecture Theatre, Reading University, Tuesday, March 5, 8.30 p.m., meeting. B.M.A. Lecture by Dr. W. R. S. Doll: "Cause of Lung Cancer."

ROCHESTER, CHATHAM, AND GILLINGHAM DIVISION.—At St. Bartholomew's Hospital, Rochester, Thursday, March 7, 8.30 p.m., meeting. Lecture by Dr. F. E. Camps: "The Emmett-Dunne Case." All medical practitioners in the area of the Division are invited.

SOUTH ESSEX DIVISION.—Thursday, March 7, visit to May and Baker, Dagenham. 2.30 p.m., meet at factory; 5 p.m., leave by coach for London; 6 for 6.30 p.m., dinner at Charing Cross Hotel; 8.30 p.m., Wyndham's Theatre; 10.45 p.m., return by coach to Dagenham.

SOUTHPORT DIVISION.—At the Prince of Wales Hotel, Southport, Friday, March 8, 8.30 p.m., meeting. Lecture by Dr. P. C. P. Cloake: "Mental Symptoms in Organic Cerebral Disease." Open to members of the medical profession.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—At Morriston Hospital, Swansea, Thursday, March 7, 3 p.m., joint clinical meeting with Swansea Division. Cases on view from 2.30 p.m.

SOUTH-WEST ESSEX DIVISION.—At Langthorne Hospital, Leytonstone, E., Wednesday, March 6, 8.30 p.m., meeting. Mr. W. D. Coltart and Dr. J. H. Cyriax: "To Manipulate or Not to Manipulate." Questions and a discussion will follow.

STIRLING BRANCH.—At Falkirk Royal Infirmary, Wednesday, March 6, 8.30 p.m., clinical meeting. Lecture by Dr. R. G. Somerville: "Poliomyelitis and Poliomyelitis Vaccination, the Present Position."

SWINDON DIVISION.—At Goddard Arms Hotel, Swindon, Thursday, March 7, 8.30 p.m., annual dinner meeting. Chief guest, Dr. Katherine Williams.

WEST MIDDLESEX DIVISION.—At Acton Technical College, High Street, Acton, W., Tuesday, March 5, 8 p.m., conjoint meeting with B.D.A. (Middlesex and Hertfordshire Branch: Acton, Ealing, and Chiswick Section). Programme of sound films: "General Anaesthesia in the Dental Chair." Dr. T. H. S. Burns will answer questions in the discussion to follow.

Meetings of Branches and Divisions

CITY DIVISION

The inaugural meeting of the 1956–7 session was held in the Old Library, B.M.A. House, on October 16, 1956. Over 100 members and their guests were present. Dr. Keith Simpson gave the B.M.A. lecture on "It Looks Like Crime."

DUNDEE BRANCH

The annual B.M.A. lecture was held in the Queen's Hotel on November 30, 1956. Mr. A. Buchan, vice-president, was in the chair and 86 members, guests, and friends attended, including representatives of the legal profession and the police. Dr. F. E. Camps spoke on "Dumb Evidence: The Interpretation of Injuries Due to Road Accidents." Dr. J. Scott Innes, Mr. J. R. S. Paterson, and Dr. A. A. B. Scott took part in subsequent discussion. A collection was taken for the Hungarian Relief Fund.

HOLLAND DIVISION

A meeting was held in the White Hart Hotel, Boston, on November 24, 1956. Thirty-five members attended. After dinner Dr. W. A. S. Falla gave an address on "Changes in Psychiatry in the Last 20 Years." It was arranged that the local medical profession should make an immediate donation of 50 guineas to the Mayor of Boston's Hungarian Relief Fund.

BRITISH MEDICAL GUILD

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ENFIELD AND POTTERS BAR (ENFIELD WEST GROUP).—At Cheriton, 14, The Ridgeway, Enfield, Sunday, March 3, 8 p.m.

EXETER.—At Library, Royal Devon and Exeter Hospital, Thursday, March 7, 8.30 p.m.

RICHMOND.—At Recreation Hall, Royal Hospital, Richmond, Sunday, March 3, 11 a.m.

Association Notices

Diary of Central Meetings

MARCH

4	Mon.	Alternative Edition Subcommittee, Joint Formulary Committee, 11 a.m.
5	Tues.	Editorial Subcommittee, Joint Formulary Committee, 11 a.m.
5	Tues.	Estates Committee, 11 a.m.
5	Tues.	Financial Advisory Committee, 2 p.m.
6	Wed.	Training Subcommittee, Occupational Health Committee, 10 a.m.
7	Thurs	Ingleby Evidence Committee, 11.30 a.m.
7	Thurs.	Compensation and Superannuation Committee, 2 p.m
7	Thurs.	Journal Committee, 2 p.m.
7	Thurs.	Charities Committee, 2.30 p.m.
8	Fri.	Full-time Non-Professorial Medical Teachers and Research Workers Group Committee, 2 p.m.
8	Fri.	Overseas Committee, 2 p.m.
12	Tues.	Amending Acts Committee, 2 p.m.
12	Tues.	Finance Committee, 2 p.m.
14	Thurs.	Ethical Review Subcommittee, Central Ethical Committee, 10.30 a.m.
14	Thurs.	International Relations Committee, 2 p.m.
14	Thurs.	Organization Committee, 2 p.m.
15	Fri.	Ophthalmic Group Committee, 10 a.m.
15	Fri.	Library Subcommittee, Science Committee, 11.30 a.m.
20	Wed.	Committee on Medical Education, 2 p.m.
21	Thurs.	G.M.S. Committee, 10.30 a.m.

Branch and Division Meetings to be Held

BARNET DIVISION.—At Middlesex Arms Hotel, Barnet By-pass, Saturday, March 9, 8 for 8.30 p.m., meeting. Short talk by Dr. Walter Hedgcock (Assistant Secretary, B.M.A.): "Recent Events." Members' ladies are invited.

BOLTON DIVISION.—At Bolton Royal Infirmary, Tuesday, March 5, 8.30 p.m., meeting in conjunction with Bolton Medical Society. B.M.A. Lecture by Dr. R. A. J. Asher: "Face Values."

BOURNEMOUTH DIVISION.—At St. Ann's Hospital, Canford Cliffs, Bournemouth, Monday, March 4, 5 p.m., psychiatric clinical meeting.

BRIGHTON AND MID-SUSSEX DIVISION.—At Hotel Metropole, Brighton, Friday, March 8, 7.30 for 8 p.m., B.M.A. annual dinner.

BROMLEY DIVISION.—At Nurses' Recreation Room, Beckenham, Hospital, Wednesday, March 6, 8.15 p.m., meeting. Address and discussion introduced by Dr. R. I. S. Bayliss: "Cortisone in General Practice."

CHESTERFIELD DIVISION.—At Walton Sanatorium, Friday, March 8, 8.45 p.m., meeting. Lecture by Mr. E. A. Nicoll: "The Knee Joint."

GLASGOW DIVISION.—At Hall of Royal Faculty of Physicians and Surgeons of Glasgow, 242, St. Vincent Street, Glasgow, Thursday, March 7, 8.30 p.m., meeting. Address by Dr. A. F. Maclean: "Medical Hypnosis."

HALIFAX DIVISION.—At Board Room, Royal Halifax Infirmary, Wednesday, March 6, 8.30 p.m., meeting. B.M.A. Lecture by Professor J. M. Webster: "History of Forensic Science in Britain."

HARROW DIVISION.—At the Rest Hotel, Kenton Road, Kenton, Tuesday, March 5, 8.30 p.m., clinical meeting. Dr. Donald Hunter: "Diagnosis and Treatment of the Anaemias, including Industrial Hazards." Members of Wembley and Hendon Divisions are invited.

HARTLEPOOLS DIVISION.—At Staincliffe Hotel, Seaton Carew, Wednesday, March 6, 8.30 p.m., meeting. Lecture by Dr. M. H. Armstrong Davison: "The Maladies of Mary Queen of Scots and Her Husbands."

HASTINGS DIVISION.—At Royal East Sussex Hospital, Tuesday, March 5, 8.15 p.m. B.M.A. Lecture by Mr. A. Dickson Wright: "Vascular Disorders of the Extremities."

HOLLAND DIVISION.—At White Hart Hotel, Spalding, Friday, March 1, 7.30 for 8 p.m., supper; 9 p.m., address by Dr. Robert Forbes: "Medico-Legal Problems in Practice."

LEWISHAM DIVISION.—At Langley Rooms, the Green Man, Bromley Road, S.E., Thursday, March 7, 7.15 for 7.45 p.m., dinner dance. Members may invite two non-medical guests besides their wives/husbands and four other medical guests and their wives/husbands.

READING DIVISION.—At Large Chemistry Lecture Theatre, Reading University, Tuesday, March 5, 8.30 p.m., meeting. B.M.A. Lecture by Dr. W. R. S. Doll: "Cause of Lung Cancer."

ROCHESTER, CHATHAM, AND GILLINGHAM DIVISION.—At St. Bartholomew's Hospital, Rochester, Thursday, March 7, 8.30 p.m., meeting. Lecture by Dr. F. E. Camps: "The Emmett-Dunne Case." All medical practitioners in the area of the Division are invited.

SOUTH ESSEX DIVISION.—Thursday, March 7, visit to May and Baker, Dagenham. 2.30 p.m., meet at factory; 5 p.m., leave by coach for London; 6 for 6.30 p.m., dinner at Charing Cross Hotel; 8.30 p.m., Wyndham's Theatre; 10.45 p.m., return by coach to Dagenham.

SOUTHPORT DIVISION.—At the Prince of Wales Hotel, Southport, Friday, March 8, 8.30 p.m., meeting. Lecture by Dr. P. C. P. Cloake: "Mental Symptoms in Organic Cerebral Disease." Open to members of the medical profession.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.—At Morriston Hospital, Swansea, Thursday, March 7, 3 p.m., joint clinical meeting with Swansea Division. Cases on view from 2.30 p.m.

SOUTH-WEST ESSEX DIVISION.—At Langthorne Hospital, Leytonstone, E., Wednesday, March 6, 8.30 p.m., meeting. Mr. W. D. Coltart and Dr. J. H. Cyriax: "To Manipulate or Not to Manipulate." Questions and a discussion will follow.

STIRLING BRANCH.—At Falkirk Royal Infirmary, Wednesday, March 6, 8.30 p.m., clinical meeting. Lecture by Dr. R. G. Somerville: "Poliomyelitis and Poliomyelitis Vaccination, the Present Position."

SWINDON DIVISION.—At Goddard Arms Hotel, Swindon, Thursday, March 7, 8.30 p.m., annual dinner meeting. Chief guest, Dr. Katherine Williams.

WEST MIDDLESEX DIVISION.—At Acton Technical College, High Street, Acton, W., Tuesday, March 5, 8 p.m., conjoint meeting with B.D.A. (Middlesex and Hertfordshire Branch: Acton, Ealing, and Chiswick Section). Programme of sound films: "General Anaesthesia in the Dental Chair." Dr. T. H. S. Burns will answer questions in the discussion to follow.

Meetings of Branches and Divisions

CITY DIVISION

The inaugural meeting of the 1956–7 session was held in the Old Library, B.M.A. House, on October 16, 1956. Over 100 members and their guests were present. Dr. Keith Simpson gave the B.M.A. lecture on "It Looks Like Crime."

DUNDEE BRANCH

The annual B.M.A. lecture was held in the Queen's Hotel on November 30, 1956. Mr. A. Buchan, vice-president, was in the chair and 86 members, guests, and friends attended, including representatives of the legal profession and the police. Dr. F. E. Camps spoke on "Dumb Evidence: The Interpretation of Injuries Due to Road Accidents." Dr. J. Scott Innes, Mr. J. R. S. Paterson, and Dr. A. A. B. Scott took part in subsequent discussion. A collection was taken for the Hungarian Relief Fund.

HOLLAND DIVISION

A meeting was held in the White Hart Hotel, Boston, on November 24, 1956. Thirty-five members attended. After dinner Dr. W. A. S. Falla gave an address on "Changes in Psychiatry in the Last 20 Years." It was arranged that the local medical profession should make an immediate donation of 50 guineas to the Mayor of Boston's Hungarian Relief Fund.

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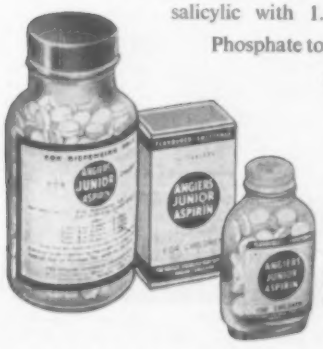

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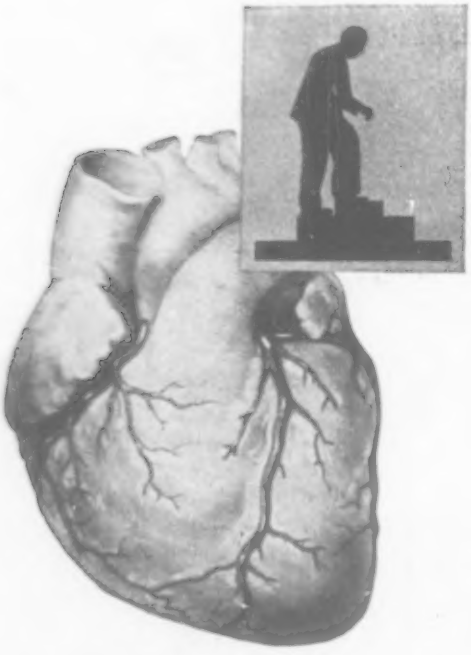

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The Reported Incidence of Glandular Fever. *K. W. Newell*
A Simplified Method for the Serological Diagnosis of Glandular Fever. *A. I. Messer*
The Effect of Oxalate and Citrate on the Platelet Count of Whole Blood and Plasma. *P. Barkhan*
The Production of Anti-human Globulin Serum (Coombs Reagent) in Goats. *I. Dunsford and C. C. Bowley*
Developmental Stages of Embryo-like Bodies in Teratoma Testis. *R. Winston Evans*
Obstruction of Inferior Vena Cava by a Persistent Eustachian Valve in a Young Adult. *R. E. Rossall and R. A. Caldwell*
The Histological Appearances of Chondrodermatitis Chronica Helicis. *E. M. McConnell*
Starch Granulomata. *C. G. Paine and P. Smith*
A *p*-Dimethylaminobenzaldehyde-nitrite Method for the Histochemical Demonstration of Tryptophane and Related Compounds. *C. W. M. Adams*
Lipomatous Pseudohypertrophy of the Pancreas. *O. D. Beresford and T. K. Owen*
The Estimation of the Individual Human Serum Proteins by an Immunological Method. *P. G. H. Gell*
The Clinical Value of Urinary 17-Ketogenic Steroid Determinations. *M. J. Lovell, F. L. Mitchell, C. G. Paine, and Arthur Jordan*
The Diagnostic Value of the Protein Excretion Pattern in Various Types of Proteinuria. *D. Wolvius and J. C. M. Verschure*
Investigation of the Sugar Content of Urine from Normal Subjects and Patients with Renal and Hepatic Disease by Paper Chromatography. *G. H. Apthorp*
Hazards to Laboratory Staff in Centrifuging Screw-capped Containers. *F. Whitwell, P. J. Taylor, and A. J. Oliver*
Nasal Carriage of *Staphylococcus aureus* in Nurses. *J. G. P. Hutchison, C. A. Green, and T. A. Grimston*
A Medium for the Rapid Recognition of Penicillin-resistant Coagulase-positive Staphylococci. *Ruth Klemperer and Geoffrey Haughton*
Technical Methods:
Spectrophotometric Estimation of Urinary Taurine. *N. R. Ling*
Chemical Tests for Ketonuria. *M. J. H. Smith*
A Quick Method of Performing the Paul-Bunnell Test. *Frey R. Ellis*
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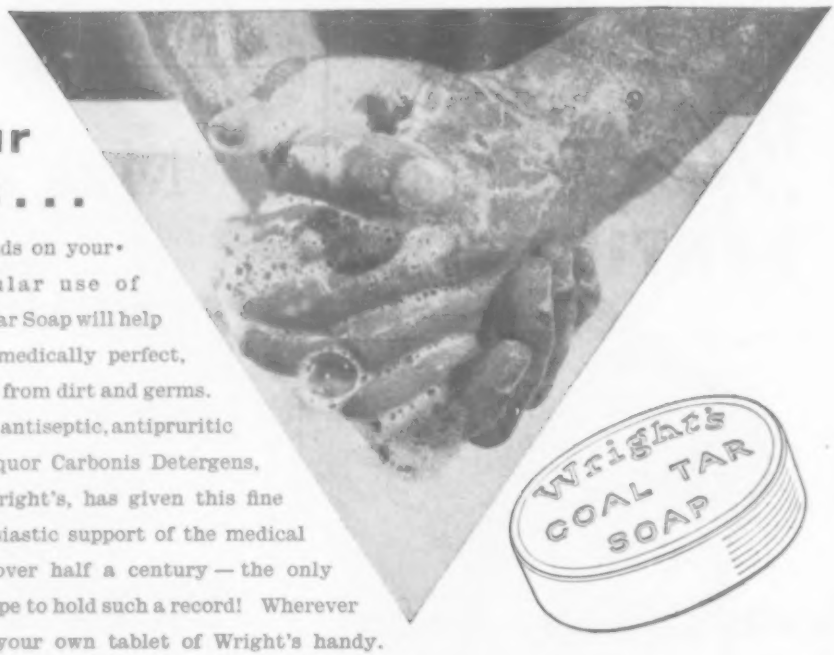

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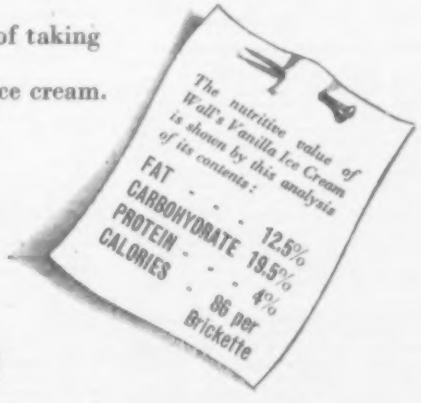
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The position of provisionally registered medical practitioners who are liable for National Service has been made clear in a notice sent to them by the Ministry of Labour and National Service.

SALARY SCALES OF JUNIOR GRADES OF HOSPITAL MEDICAL STAFF

Registrar Grades, Whole-time

(a) *REGISTRAR:* Posts obtained normally not less than two years after registration as a medical practitioner and held normally for two years: £850 per annum in the first year; £965 per annum in the second and any subsequent years. If the post is resident a deduction of £170 per annum is made.

(b) *SENIOR REGISTRAR:* Posts obtained normally not less than four years after registration as a medical practitioner and held normally for four years; £1,100 per annum in the first year; £1,200 per annum in the second year; £1,300 per annum in the third year; £1,400 per annum in any subsequent years. If the post is resident a deduction of £200 per annum is made.

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(a) *HOUSE OFFICERS:*

(i) *Provisionally registered medical practitioners:* £425 per annum for the first post held; £475 per annum for the second and all subsequent posts held;

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(ii) *Fully registered medical practitioners:* £525 per annum for any post held;

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In each case under sub-sections (i) and (ii) above, a deduction of £125 per annum in respect of board and lodging and other services provided shall be made and each post shall be tenable for six months.

(b) *SENIOR HOUSE OFFICER:* Posts obtained normally not less than one year (in Scotland, two years) after registration as a medical practitioner and normally held for one year only: £745 per annum. If the post is resident a deduction of £150 per annum is made.

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Paediatrics
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PRACTICES (Wanted)

WANTED, PRACTICE OR PARTNERSHIP IN South England or Channel Islands.—Box PR.303, B.M.J.

CAMBRIDGE M.D., DISILLUSIONED BY N.H.S., seeks central London private practice. Capital available.—Box PR.342, B.M.J.

WOULD PRACTITIONER DESIRING PARTNER and having house for sale please communicate with Box PR.343, B.M.J.

PARTNERSHIPS (Wanted)

GUY'S GRADUATE, M.R.C.O.G., 34, WISHES Assistantship with view. British, Protestant, married, car. Capital for house. G.P. experience. Present appointment Professorial Unit. Wishes work with obstetric scope and congenial colleagues.—Box PA.245, B.M.J.

PARTNERSHIP REQUIRED WITH DOCTOR contemplating eventual retirement. Ample capital for house purchase.—Box PA.305, B.M.J.

PARTNERSHIP REQUIRED WITH DOCTOR contemplating eventual retiral. Home or Southern counties.—Box PA.302, B.M.J.

PRINCIPAL SEEKS PARTNERSHIP WITH OR without view to succession. London, or where access to Jewish community is available.—Box PA.344, B.M.J.

SCOTS GRADUATE, 34, MARRIED, 3 YEARS' G.P. experience, seeks Partnership or genuine view. Capital for house.—Box PA.304, B.M.J.

ASSISTANTSHIPS VACANT

Box A.3781 thanks all applicants. Short list settled. Sorry for delay.

Wanted, Assistant in industrial practice North Yorks. Salary £1,000. Car/car allowance.—Box A.347, B.M.J.

Wanted immediately, English or Scottish male Assistant. West Midland town. 6-7 months. Own car. No view. Salary £1,050.—Box A.320, B.M.J.

Assistant, male, Kent, own car. Flat available for married man. £1,200 inclusive.—Box A.345, B.M.J.

Assistant, male, single, for practice in Portsmouth. £700 per annum all found, plus £150 per annum car allowance.—Box A.322, B.M.J.

Assistant required on housing estate near Manchester. Own car essential. Please reply to Box A.326, B.M.J.

Assistant required, Newcastle-on-Tyne. Car owner. Accommodation available. Good commencing salary.—Box A.308, B.M.J.

Assistant wanted immediately for three partners. West Riding, Yorks. Male, married, car owner. Salary £1,000. Furnished house. Rota.—Box A.323, B.M.J.

Assistant wanted London area. Good salary and prospects. Accommodation available.—Box A.321, B.M.J.

Half-time Assistant wanted, West End area. Rota duties and some surgeries. Car owner. Live out. Excellent salary.—Box A.307, B.M.J.

Part-time Assistant required in East Midland town. Salary by agreement. Pleasant town and practice.—Box A.306, B.M.J.

Single, male, indoor Assistant with car. Midland town. No view. £920 inclusive.—Box A.346, B.M.J.

ASSISTANTS AVAILABLE

Aberdeen graduate, 1953, married, car owner, keen obstetrics, 2½ years' G.P. experience, seeks Assistantship, preferably with view.—Box A.318, B.M.J.

London Hospital and Cambridge, aged 32, married, seeks Assistantship with view. Four years' hospital appointments including medical registrar. Traineeship with obstetrics. Car owner.—Box A.317, B.M.J.

Assistants Available—contd.

Assistantship with view in non-industrial area sought by keen and conscientious practitioner, 32, English, married, car, capital for house. Very general hospital experience, rural trainee. D.R.C.O.G. Free when required.—Box A.319, B.M.J.

Postgraduate, G.P. experience, 35, Woman, requires part-time G.P. work, London. Available next two years.—Waterloo 7280. Evenings.

Principals requiring Assistants with or without view are invited to communicate with us. Many applicants available. No charge.—Percival Turner, Medical Agency, 25, Maiden Lane, W.C.2.

TRAINEE GENERAL PRACTITIONERS (Vacant)

Wanted, Trainee end of March, North Lincs seaside town. Flat overlooking sea, and garage. Usual emoluments.—Box T.348, B.M.J.

Wanted, Trainee, outdoor, car, for partnership practice Chingford, Essex.—Box T.349, B.M.J.

Married, single, male or female, Wye Valley rural practice. Midwifery, hospital.—Box T.310, B.M.J.

Trainee desired, male or female, single or married. Car owner. Modern furnished flat provided. Very pleasant working conditions. Rota system. Gloucestershire. Commence April 1.—Box T.334, B.M.J.

Trainee, male, single, outdoor, semi-rural practice, Gloucestershire. Car essential.—Box T.232, B.M.J.

Trainee, North Buckinghamshire. Furnished house available.—Box T.350, B.M.J.

Trainee required. Flat available, Essex.—Write, Box T.329, B.M.J.

Trainee required for Group Practice in Thames Valley town. Maternity unit. Factory and hospital appointments. Accommodation available. Own car necessary.—Box T.220, B.M.J.

Trainee required for London S.E. Catford/Bromley area partnership. Good all-round experience, midwifery and full hospital investigations available. Live out. Car driver or own car. Time for study. Salary £775 without car, £950 with car. —Box T.211, B.M.J.

Trainee vacancy early May. Pleasant South Worcestershire rural practice. Excellent general experience and opportunities for postgraduate study.—Box T.309, B.M.J.

LOCUMS (Vacant)

Wanted, Locum August 13 for three weeks. Country practice. Live in. British, male, with experience preferred. Car provided. Salary usual rate.—Dr. Stevenson, Heighington, Lincoln.

Wanted, Locum, April 21 to May 4, car essential. 17 plus 3 guineas weekly.—Wade, Ripon. Mon.

Wanted, Locum. Pleasant Birmingham suburb. Any consecutive three weeks between July 27 to September 7. Accommodation.—Box L.330, B.M.J.

Locum and wife required near Liverpool, April 6 to 22. Remuneration good.—Box L.311, B.M.J.

Locum (outdoor) required. Partnership practice, London, N.W.10. May 13 to June 29.—Box L.313, B.M.J.

Locum required in Midland country town from June 14 to July 15, for each of two partners' holiday. Must be able to drive car.—Box L.314, B.M.J.

Locum required, either sex, two weeks April, general practice, Yorkshire West Riding.—Box L.352, B.M.J.

Locum required May 6 to 18, near Dagenham, Essex. Car available. 16 gns. per week.—Box L.312, B.M.J.

Locum wanted, Leeds suburb, March 16 to April 6, 22 gns. all in.—Box L.324, B.M.J.

Woman Locum wanted May 4 to 11. Small practice Croydon. Also Assistant one half-day weekly. Occasional week-ends.—Box L.353, B.M.J.

Locums

It is expected that during a course for general practitioners from April 29 to May 11 the services of Locums will be required. Anyone available to undertake locums should inform the Secretary, Welsh National School of Medicine, 34, Newport Road, Cardiff. (4075)

St. Mary's Hospital, Paddington, W.2

Applications are invited from suitably qualified registered practitioners for the post of

Locum Resident Anaesthetist

graded Senior House Officer, for the period March 27 to May 31 inclusive. Applications, stating nationality, date of birth, permanent address, qualifications (with dates), details of National Health Service gradings of previous and present appointments, together with the names and addresses of three referees, should reach Alan Powditch, House Governor, not later than March 16, 1957. (9935)

Amersham General Hospital, Bucks

Locum House Surgeon

required March 4. Apply Secretary. (9844)

Barnet General Hospital, Wellhouse Lane, Barnet, Herts (461 beds)

Locum Tenens Medical Registrar

required from May 6 to June 2 inclusive. Apply, Hospital Secretary (Barnet 7421). (9436)

Barnet General Hospital, Wellhouse Lane, Barnet, Herts

Locum Tenens Junior Hospital Medical Officer (Geriatrics)

required March 11 to 25 inclusive. Apply Hospital Secretary (Barnet 7421). (9024)

Bedford General Hospital (439 beds)

Locum Anaesthetic Registrar

required early March, pending new appointment, probably for four weeks. Detailed applications, with copies of two recent testimonials, to Group Secretary, Bedford Group H.M.C., 3, Kimbolton Road, Bedford. (9508)

Brighton and Lewes Hospital Management Committee

Full-time Locum Chest Physician

required from March 18 to 31, 1957. Applications, giving age, qualifications and experience, with names and addresses of two referees, to be forwarded to Secretary, Brighton and Lewes Hospital Management Committee, Royal Sussex County Hospital, Brighton, 7. (9974)

Canadian Red Cross Memorial Hospital, Taplow, near Maidenhead

Locum Senior House Officer, Anaesthetics

required March 10 to 23. Applications, with copies of two testimonials, to Secretary. (9829)

City General Hospital, Sheffield, 8

Locum House Surgeon (General Surgery)

required for the period April 28 to July 14, 1957. Apply, giving full details, to the Group Secretary, Nether Edge Hospital, Sheffield, 11. (9500)

Hastings Hospital Management Committee

Locum Orthopaedic Registrar

required for whole-time duties, March 6 to 20, 1957 (inclusive). Remuneration £17 10s. per week. Non-resident. Apply, giving details of qualifications and experience, to Group Secretary, 11, Homesdale Gardens, Hastings. (9860)

John Coupland Hospital, Gainsborough (40 medical and surgical beds)

Locum Resident Medical Officer

required for the period March 4 to 29 inclusive. Salary £17 10s. per week. Apply, with full particulars, to Group Secretary, County Hospital, Lincoln. (9543)

Kingston Group Hospital Management Committee

Kingston Hospital, Wolverton Avenue, Kingston-upon-Thames

Applications are invited from suitably qualified medical officers for the post of

Locum Assistant Orthopaedic Surgeon (S.H.M.O. grade)

for the period March 23 to 30, 1957. Applications, stating age, qualifications and experience, with two recent testimonials, should reach the Physician Superintendent as soon as possible. (9861)

Leeds Regional Hospital Board

Short-term Locum Tenens

Appointments in the Registrar grade are constantly available at hospitals in the area of the Board, particularly in the specialties of anaesthetics, general medicine, general and orthopaedic surgery and psychiatry. Interested practitioners suitably experienced should communicate with the Secretary, Joint Registrars Committee, Park Parade, Harrogate. (5281)

Maidenhead Hospital, St. Luke's Road, Maidenhead

Locum House Physician

required March 1. Applications to Secretary. (9539)

Newcastle Regional Hospital Board

Locum Tenens S.H.M.O. Psychiatrist

whole-time, at St. George's Hospital, Morpeth, for a period of approximately three months. Married or single furnished accommodation available. Applications, with names and addresses of three referees, to Regional Psychiatrist, Regional Hospital Board, Benfield Road, Newcastle upon Tyne, 6, within seven days. (9862)

New Sussex Hospital for Women, Windlesham Road, Brighton

Locum House Surgeon, female (S.H.O. grading) required for the period March 10 to 22, 1957, inclusive. Salary at the rate of £14 10s. per week, less residential emoluments. Applications, with full particulars, to be sent to the Administrative Officer as soon as possible. (9938)

Northern Regional Hospital Board (Scotland)

Whole-time Locum Tenens Anaesthetist (Senior Registrar grade)

required for three and a half months from June 1 1957. Main duties at the Royal Northern Infirmary and Raigmore Hospital, Inverness. Applications, on forms obtainable from the undersigned, should be submitted as soon as possible.—A. M. Fraser, M.D., Secretary and Administrative Medical Officer, Office of the Northern Regional Hospital Board, Raigmore, Inverness. (9631)

Sheffield Regional Hospital Board

Whole-time Resident Locum Registrar (General Surgery and E.N.T.)

required March 14 at Rotton General Hospital. Remuneration £17 10s. per week. Apply Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, naming two referees. (9848)

Sheffield Regional Hospital Board

Whole-time Locum

required for Consultant Anaesthetist for any week during March. Duties at Grantham and Newark Hospitals. Remuneration according to status. Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, naming two referees. (9830)

Sheffield Regional Hospital Board

Locum Registrar (Anaesthetics)

required immediately at the City General Hospital, Sheffield, until August 10. Remuneration £17 10s. per week. Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, naming two referees. (9831)

Sheffield Regional Hospital Board

Whole-time Locum Resident Surgical Registrar

required for period March 18 to June 18, at the Grantham and Kesteven General Hospital. Remuneration £17 10s. per week, less a deduction for residence. Apply to the Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, naming two referees. (9832)

Sheffield Regional Hospital Board

Locum Resident Registrar (Anaesthetics)

required immediately for one month in the first instance at Beckett Hospital, Barnsley. Remuneration £17 10s. per week. Reply Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, naming two referees. (9833)

South Manchester H.M.C., Withington Hospital, Manchester, 20

Locum Registrar in Orthopaedics

required from April 1 to 19, 1957. Applications, with full details, to the Group Secretary at above address. (4016)

South-West Metropolitan Regional Hospital Board

Portsmouth Group Hospital Management Committee

Applications are invited for the following Locum appointment vacant now:

Registrar in the Chest Services of the Group for duties at the Portsmouth Chest Clinic and tuberculous and non-tuberculous beds at the Infectious Diseases Hospital and Saint Mary's Hospital, Portsmouth, including experience with a major Thoracic Surgery Unit. Applications should be sent to the Group Secretary, Saint Mary's Hospital, Milton, Portsmouth. (9863)

The General Hospital, Rochford, Essex

Locum Senior House Officer (General Medicine) required from March 11 to 22, 1957. Applications to the undersigned as soon as possible.—J. C. Field, Secretary, General Hospital, Rochford, Essex. (4017)

Locums (Vacant)—contd.

Tynemouth Victoria Jubilee Infirmary, Hawkey's Lane, North Shields

Locum Resident Medical Officer (J.H.M.O. or S.H.O. grade)
required for five weeks commencing March 1, 1957. Applications, with names of two referees, to House Governor. (9814)

Welsh Regional Hospital Board

Whole-time Locum Tenens Consultant
General Medicine, required West Wales Hospital Management Committee area, March 20 to 30 and April 15 to 27, 1957. Applications, naming two referees, to S.A.M.O., Temple of Peace, Cathays Park, Cardiff. (9926)

LOCUMS (Available)

Available from March 2. Experienced. Own car. North-East preferred.—Box L.315, B.M.J.

Bache'or, 37, available Locums, April to October. Experienced, car owner.—Box L.332, B.M.J.

Four years' graduate requires H.S. Locum March 14-31. Gynaecology, obstetrics or surgery.—Box L.351, B.M.J.

Locums wanted by medical woman. Experienced, car.—Box L.333, B.M.J.

Registered Practitioner available Locum. Own car, live in.—Box L.331, B.M.J.

APPOINTMENTS

ANAESTHETICS

SOUTH-WESTERN REGIONAL HOSPITAL BOARD

West Cornwall Clinical Area

Applications are invited for the appointment of a
CONSULTANT ANAESTHETIST
to the West Cornwall Clinical Area. The appointment may be held either on a whole-time or maximum (nine sessions) part-time basis. The successful candidate, who will be required to work mainly at the Royal Cornwall Infirmary, Truro, will also undertake regular sessions at the West Cornwall Hospital, Penzance, and at Falmouth Hospital. In addition, he may be required to visit other hospitals in the clinical area as determined by the Regional Board from time to time. Twelve copies of applications, stating date of birth, qualifications and experience, together with the names and addresses of two referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park Road, Bristol, 8, not later than March 23, 1957. (9990)

THE UNITED OXFORD HOSPITALS

Applications are invited for the post of
CONSULTANT ANAESTHETIST
to the United Oxford Hospitals, whole-time or maximum part-time. Experience in anaesthesia for thoracic surgery desirable. Applications (ten copies), stating age, qualifications and experience, should reach the undersigned not later than March 16, 1957.—E. J. R. Burrough, Administrator, Radcliffe Infirmary, Oxford. (9510)

WHITTINGTON HOSPITAL, London, N.19

ANAESTHETIC REGISTRAR
required. Post recognized for F.F.A. and D.A. Hospital may be visited by direct appointment. Application forms obtainable from, and returnable to, the Secretary, 46, Cholmeley Park, N.6, by March 11, 1957. (9815)

BEDFORD GENERAL HOSPITAL (439 beds)

Applications required for the post of
ANAESTHETIC REGISTRAR
Vacant early April. Resident or non-resident. Post recognized for the D.A. and F.F.A.R.C.S. This appointment gives good general experience with adequate consultant supervision. Application forms obtainable from, and returnable to, Group Secretary, Bedford Group H.M.C., 3, Kimbolton Road, Bedford. Closing date March 8, 1957. (9511)

NORTHERN REGIONAL HOSPITAL BOARD (Scotland)

Applications are invited for the whole-time post of
SENIOR REGISTRAR IN ANAESTHETICS
Duties mainly at the Royal Northern Infirmary and Raigmore Hospital, Inverness. Forms of application, and further particulars, may be obtained from the undersigned, with whom applications should be lodged by Saturday, March 16, 1957.—A. M. Fraser, M.D., Secretary and Administrative Medical Officer, Office of the Northern Regional Hospital Board, Raigmore, Inverness. (9632)

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

REGISTRAR
whole-time, resident, required in Department of Anaesthesia at Edgware General Hospital (715 beds). Vacant March 25, 1957. Hospital may be visited by direct appointment with Medical Director. Application forms obtainable from, and returnable to, Group Secretary, Hendon Group Hospital Management Committee, Edgware General Hospital, Edgware, Middlesex, by March 12, 1957. (9975)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the post of whole-time
ANAESTHETIC REGISTRAR
to the Southampton Group of Hospitals for work in the General and Special Units, vacant in May. Special facilities for working for Primary or Final F.F.A.R.C.S. Forms of application may be obtained from the undersigned, to whom they should be returned not later than March 13, 1957. —Frank Jennings, Group Secretary, Southampton Group Hospital Management Committee, Bullar Street, Southampton. (9925)

HULL (A) GROUP HOSPITAL MANAGEMENT COMMITTEE

JUNIOR HOSPITAL MEDICAL OFFICER in Anaesthetics
(recognized for D.A. and F.F.A.) required for duties at hospitals in the Group. Excellent experience. Non-resident. Applications to Group Secretary, Hull Royal Infirmary. (9602)

SOUTH-EAST NORTHUMBERLAND HOSPITAL MANAGEMENT COMMITTEE

JUNIOR ANAESTHETIST
Junior Hospital Medical Officer or Senior House Officer grade, according to experience. Post recognized under Fellowship and Diploma Regulations of the Faculty of Anaesthetists. Applications, with names of two referees, to Group Secretary, Preston Hospital, North Shields. (9802)

NELSON HOSPITAL, Kingston Road, Merton, S.W.20

RESIDENT ANAESTHETIST
(Senior House Officer grade)
Post approved for the D.A. Vacant end of March. Applications, stating age, experience and qualifications, with copies of testimonials and the name of one referee, should be sent to the Group Secretary, St. Helier Hospital, Carshalton, Surrey. (9864)

EDINBURGH. S. ELSIE INGLIS MATERNITY HOSPITAL (68 beds)

Applications are invited from registered medical practitioners for the post of
SENIOR HOUSE OFFICER (Anaesthetics)
(preferably resident)
The appointment is recognized for the Diploma in Anaesthetics and is for six months in the first instance from April 1, 1957. Salary £745 per annum, less £150 per annum in respect of residential emoluments. In addition to the obstetric work at Elsie Inglis Maternity Hospital, there are ample opportunities for experience as a trainee anaesthetist at general surgical and gynaecological operations in other hospitals in the Group. Applications, with copies of testimonials, to the Medical Superintendent, Edinburgh Southern Hospitals Group, 21, Hill Street, Edinburgh, 2. (9991)

GLASGOW ROYAL INFIRMARY

SENIOR HOUSE OFFICER IN ANAESTHETICS
Write, giving three names for reference, not later than March 9, 1957, to the Secretary, Board of Management for Glasgow Royal Infirmary and Associated Hospitals, 135, Buchanan Street, Glasgow, C.1. (4050)

HOPE HOSPITAL

Salford Hospital Management Committee

Applications are invited for the post of
SENIOR HOUSE OFFICER ANAESTHETIST
(Resident)
In the theatres about 3,000 operations are performed per annum. Two Consultant Anaesthetists are available. The hospital is recognized for the D.A. and F.F.A.R.C.S. Applications, stating the names and addresses of two referees, should be forwarded to the Secretary, Hope Hospital, Salford, 6, as soon as possible. (9940)

NORTHAMPTON GENERAL HOSPITAL (482 beds)

Vacancy April 1 next for
SENIOR HOUSE OFFICER
Department of Anaesthetics. Six months' appointment in first instance. Recognized for D.A. and F.F.A.R.C.S. Applications, as soon as possible, to S. G. Hill, Superintendent. (9256)

KETTERING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Kettering General Hospital, Kettering (130 beds)

Applications are invited from registered medical practitioners for the appointment of
SENIOR HOUSE OFFICER IN ANAESTHETICS
Post vacant April 14, 1957. Post recognized for D.A. Applications, giving details of qualifications and experience, and enclosing copies of three recent testimonials, to be sent to the Group Secretary at the above address. (9921)

LEICESTER ROYAL INFIRMARY

Applications are invited for the post of
SENIOR HOUSE OFFICER (Anaesthetics)
Vacant April 1. The appointment includes duties at both the Leicester Royal Infirmary and the Leicester General Hospital. Recognized for D.A., F.F.A. Applications, stating age, qualifications and experience, with copies of recent testimonials, to Group Secretary, Leicester No. 1 Hospital Management Committee, the Leicester Royal Infirmary, immediately. (9834)

NOTTINGHAM GENERAL HOSPITAL

SENIOR HOUSE OFFICER (Anaesthetics)
required about March 17, 1957. The post is recognized for the D.A. and the F.F.A.R.C.S. This is a busy general hospital giving experience in all branches of surgery. Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Group Secretary. (9226)

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL GENERAL HOSPITAL GROUP

South Devon and East Cornwall Hospital, Plymouth

SENIOR HOUSE OFFICER IN ANAESTHETICS
Vacancies April 1, May 1, 1957. Recognized for the D.A. and F.F.A.R.C.S. Applicants to state which date they will be available. The appointment will be for a period of twelve months.—F. Hall, Deputy Group Secretary, 7, Nelson Gardens, Stoke, Plymouth. (9964)

SHREWSBURY HOSPITAL GROUP

Royal Salop Infirmary and Copthorne Hospital, Shrewsbury (500 beds)

RESIDENT ANAESTHETIST
(Senior House Officer)
Post recognized for F.F.A.R.C.S. Registrar also employed. Vacant immediately. Applications, and copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury. (9547)

SOUTHERN GENERAL HOSPITAL Glasgow, S.W.1

SENIOR HOUSE OFFICER IN ANAESTHETICS
The post is approved for D.A. and F.F.A. Write immediately to Secretary, Board of Management for Glasgow South-Western Hospitals, 1301, Govan Road, Glasgow, S.W.1, naming two referees. (9939)

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE

RESIDENT ANAESTHETIST
is required for duties at hospitals in the above Group, Senior House Officer grade. Post vacant immediately. The post offers good practical experience under the supervision of the visiting anaesthetists. The hospitals are recognized for the F.F.A.R.C.S. and the D.A. In addition, every opportunity is given to attend lectures at the neighbouring university 12 miles away. Apply to the Group Secretary, Sunderland Area Hospital Management Committee, General Hospital, Sunderland, naming two referees. (9941)

WARRINGTON GENERAL HOSPITAL (344 beds)

Applications are invited for the post of
RESIDENT ANAESTHETIST (Male or Female)
(Graded as Senior House Officer)
The hospital is recognized for the D.A. examination. Salary is £745 per annum, less a deduction of £150 per annum for residential emoluments. Applications, stating qualifications and experience, should be sent to Henry L. Boot, Group Secretary, Warrington and District Hospital Management Committee, c/o General Hospital, Warrington, Lancs. (9067)

NORTH MIDDLESEX HOSPITAL Edmonton, N.18

RESIDENT HOUSE ANAESTHETIST
(House Officer)
required for April 16. Six months' appointment. Post recognized for D.A. and F.F.A. R.C.S. Whole-time duties under supervision of Senior Anaesthetists. Application, stating age, nationality, qualifications, experience, with copies of recent testimonials, to Secretary of Hospital by March 12. (4010)

Anaesthetics—contd.

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 next for
HOUSE OFFICER
Department of Anaesthetics. Recognized for D.A. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (9258)

BACTERIOLOGY

GLASGOW VICTORIA HOSPITALS

SENIOR HOUSE OFFICER
required for the Sectoral Bacteriological Laboratory at Mearnskirk Hospital, with duties in the Victoria Infirmary. No previous laboratory experience necessary. Applications, with names of two referees, to the Secretary, Board of Management for Glasgow Victoria Hospitals, 24, St. Vincent Place, Glasgow, C.1. (9976)

CARDIOLOGY

NATIONAL HEART HOSPITAL
Westmoreland Street, W.1
(with which is associated the Institute of Cardiology)

CONSULTANT SURGEON
The Board of Governors invite applications for the post of Consultant Surgeon. The successful candidate will be required to attend up to four sessions weekly. Although the Board will make the appointment immediately, the duties of the post will not commence until the surgical facilities, which form part of the approved extension of the hospital, are provided. Applications (10 copies), stating age, qualifications, present appointments (giving number of sessions), and the names of three referees, should be sent to me not later than Saturday, March 30, 1957.—Robert G. E. Whitney, Secretary to the Board. (9922)

CASUALTY

OXFORD REGIONAL HOSPITAL BOARD

REGISTRAR
in Accident and Orthopaedic Surgery to the hospitals of Northampton Hospital Management Committee. The duties will mainly be at Northampton General Hospital, but will include work at the Mansfield Orthopaedic Hospital. The appointment will be for one year and eligible for a second year. The successful candidate may live in or near the Northampton General Hospital. Applications, on forms obtainable from the Secretary, Registrars Committee, 43, Banbury Road, Oxford, should reach him by March 16. (9513)

UPTON HOSPITAL, Slough

REGISTRAR
required for busy Casualty Department, resident or non-resident. Experience provided in orthopaedic and hand surgery. Forms of application from, and returnable to, Secretary, Windsor H.M.C., Alma Road, Windsor, by March 10. (9514)

BOOTLE HOSPITAL, Liverpool, 20

Applications are invited for a post as
CASUALTY OFFICER (J.H.M.O. grade)
at this busy hospital. Post vacant from March 1, 1957. Apply to Secretary, Walton Hospital, Liverpool, 9, giving details of experience, qualifications, age, date of registration, and names of two referees. (9929)

CENTRAL WIRRAL GROUP

Clatterbridge Hospital, Bebington, Cheshire
(819 beds)

JUNIOR HOSPITAL MEDICAL OFFICER
Casualty/Orthopaedics (resident) or locum required
Salary in accordance with current terms and conditions of service, i.e., £775 by £50 to £1,075 per annum, less £170 per annum for residence. Application forms, obtainable from Group Secretary, to be returned as soon as possible. (9752)

HUDDERSFIELD ROYAL INFIRMARY
(285 beds)

Applications are invited for the post of
CASUALTY OFFICER
The post, which is resident, is recognized under the Fellowship Regulations, and will be graded either J.H.M.O. or S.H.O. according to experience. Duties terminate at 7 p.m., with one night weekly on call. Applications for the appointment, which will be vacant on April 1, 1957, should be accompanied by copies of three recent testimonials and addressed to the undersigned.—H. J. Johnson, Group Secretary, the Royal Infirmary, Huddersfield. (9037)

IMPORTANT NOTICE
APPOINTMENTS

Medical practitioners are requested
not to apply

for any appointment specified in this notice or for any appointment under an authority referred to in this notice without first communicating with the Secretary of the British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, or with the Medical Secretary of the Irish Medical Association, 10, Fitzwilliam Place, Dublin, to learn the views of the Association regarding the terms and conditions of service pertaining to the appointment:

REPUBLIC OF IRELAND,
PORTIUNCULA HOSPITAL,
BALLINASLOE, CO. GALWAY.
Resident and Visiting Medical Staff.

By Order of the Council,
A. MACRAE,
February 26, 1957. Secretary.

COVENTRY AND WARWICKSHIRE HOSPITAL
Coventry

SENIOR ASSISTANT (J.H.M.O. grade)
for accident and orthopaedic wards. Appointment for one year in first instance, renewable annually up to four years. Recognized F.R.C.S. Previous experience desirable. Resident accommodation available. Applications to Hospital Secretary. (9865)

ROYAL ALEXANDRA INFIRMARY, Paisley

JUNIOR HOSPITAL MEDICAL OFFICER
required for Casualty Department. Applicants must be fully registered for one year. Applications to Group Medical Superintendent. (4051)

ROYAL SUSSEX COUNTY HOSPITAL
Brighton, 7

SENIOR CASUALTY OFFICER (J.H.M.O.)
non-resident, required. Vacant now. Recognized for F.R.C.S. Applications, stating usual particulars, and the names of two referees, to the Administrative Officer. (4052)

DREADNOUGHT SEAMEN'S HOSPITAL
Greenwich, S.E.10

CASUALTY AND RECEIVING ROOM OFFICER
(non-resident)
required on March 19. Post recognized by the Royal College of Surgeons. Salary £745 per annum. Applications, stating age, nationality, qualifications and experience, with the names of three recent referees, should be sent to the Secretary at the above address immediately. (4044)

LAMBETH HOSPITAL, Brook Drive, S.E.11

Applications are invited for appointment as
CASUALTY OFFICER
falling vacant on April 1, 1957. The position is graded as S.H.O., and is recognized for the F.R.C.S. The successful candidate will be required to do locum duties from March 18, 1957. Application forms from the Physician Superintendent. (9503)

BARNET GENERAL HOSPITAL
Wellhouse Lane, Barnet, Herts

CASUALTY OFFICER
(Senior House Officer grade)
Appointment for one year. Non-resident. Hours: 9 a.m. to 6 p.m., Monday to Friday; 9 a.m. to 1 p.m. Saturday. Post vacant April 1. Applications, stating age, qualifications and experience, with copies of two testimonials, to be sent to the Hospital Secretary. (4040)

ESSEX COUNTY HOSPITAL, Colchester
(185 beds)

Applications invited for post of
SENIOR HOUSE OFFICER
to Casualty and E.N.T. Departments. Post tenable for six months or one year. Recognized for F.R.C.S. Applications, with copies of three testimonials, to Group Secretary, Colchester H.M.C., 14, Pope's Lane, Colchester, Essex. (9992)

GENERAL HOSPITAL, Nottingham

Applications are invited for the post of
SENIOR HOUSE OFFICER (Casualty)
Duties to commence early March. Establishment three. Recognized for F.R.C.S. Post offers wide experience of casualty work. Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Secretary, General Hospital, Nottingham. (9805)

IPSWICH AND EAST SUFFOLK HOSPITAL
Heath Road Wing (280 beds), Ipswich

Applications invited for post of
NON-RESIDENT CASUALTY OFFICER (S.H.O.)
Vacant March 7, 1957. Day-time duties only, offering opportunity of study for higher examinations. Applications, with full details, to the Hospital Secretary. (9515)

KING EDWARD VII HOSPITAL, Windsor

CASUALTY OFFICER
required. Senior House Officer grade. Department forms part of Accident Service of Windsor Group. Duties include House Surgeon to E.N.T. and Eye Departments. Previous experience in treatment of acute injuries desirable. Applications, stating age, qualifications (with date), nationality, with copies of recent testimonials, to Secretary. (9866)

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 next for
SENIOR HOUSE OFFICER
Casualty Department, to work in conjunction with House Officer or another Senior House Officer, Casualty Department. Recognized for F.R.C.S. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (9760)

NORTH WIRRAL HOSPITAL MANAGEMENT COMMITTEE

Victoria Central Hospital, Liscard Road, Wallasey

Applications are invited from registered medical practitioners for the appointment of
RESIDENT CASUALTY OFFICER
(Senior House Officer grade)
Salary £745 per annum, less £150 p.a. for board, lodging, and other services. The Casualty Out-Patient Department is contained in a new large extension recently opened and provides a new Minor Operations Theatre; Consulting Clinics; Physiotherapy; Pharmacy and central laboratory departments. Terms and conditions of service are in accordance with the Regulations of the Ministry of Health. Applications, giving details of age, nationality, qualifications and experience, accompanied by names of three persons to whom reference may be made, to the Administrative Officer, Victoria Central Hospital, Liscard Road, Wallasey, Cheshire. (4008)

SELLY OAK HOSPITAL, Birmingham, 29
(955 equipped beds)

ASSISTANT CASUALTY OFFICER
(Senior House Officer)
Post vacant April 1, 1957. Resident or non-resident. Recognized for F.R.C.S. Applications giving qualifications, experience, age and copies of three recent testimonials, to the Medical Superintendent. (9817)

STOCKPORT AND BUXTON HOSPITAL MANAGEMENT COMMITTEE

Stockport Infirmary

Applications are invited for the post of
SENIOR HOUSE OFFICER
(Non-resident Casualty Officer)
Hours of duty: 8.30 a.m. to 4.30 p.m. Monday to Friday; 8.30 a.m. to 12 noon Saturday. The post is recognized under F.R.C.S. regulations and would suit a candidate wishing to study for higher qualifications. Applications, stating age, qualifications and experience, together with copies of two testimonials, to be addressed to the Secretary, Stockport and Buxton H.M.C., 59B, Shaw Heath, Stockport, Cheshire. (9993)

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Applications invited for the appointment of
SENIOR HOUSE OFFICER
as Casualty Officer and Orthopaedic House Surgeon at Great Western Hospital, Swindon, vacant on March 14. Post recognized for R.C.S. for six months of year's training under Fellowship regulations. Work of accident and orthopaedic department, associated with Nuffield Orthopaedic Centre (Wingfield-Morris Orthopaedic Hospital), Oxford, includes large number of industrial injuries. Salary £745 per annum, less £150 per annum for residential emoluments. Full details, and names of three referees, to Secretary, 7, Okus Road, Swindon, Wilts, as soon as possible. (9481)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

Locums (Vacant)—contd.

Tynemouth Victoria Jubilee Infirmary, Hawkey's Lane, North Shields

Locum Resident Medical Officer (J.H.M.O. or S.H.O. grade)
required for five weeks commencing March 1, 1957. Applications, with names of two referees, to House Governor. (9814)

Welsh Regional Hospital Board

Whole-time Locum Tenens Consultant
General Medicine, required West Wales Hospital Management Committee area, March 20 to 30 and April 15 to 27, 1957. Applications, naming two referees, to S.A.M.O., Temple of Peace, Cathays Park, Cardiff. (9926)

LOCUMS (Available)

Available from March 2. Experienced. Own car. North-East preferred.—Box L.315, B.M.J.

Bache'or, 37, available Locums, April to October. Experienced, car owner.—Box L.332, B.M.J.

Four years' graduate requires H.S. Locum March 14-31. Gynaecology, obstetrics or surgery.—Box L.351, B.M.J.

Locums wanted by medical woman. Experienced, car.—Box L.333, B.M.J.

Registered Practitioner available Locum. Own car, live in.—Box L.331, B.M.J.

APPOINTMENTS

ANAESTHETICS

SOUTH-WESTERN REGIONAL HOSPITAL BOARD

West Cornwall Clinical Area

Applications are invited for the appointment of a
CONSULTANT ANAESTHETIST
to the West Cornwall Clinical Area. The appointment may be held either on a whole-time or maximum (nine sessions) part-time basis. The successful candidate, who will be required to work mainly at the Royal Cornwall Infirmary, Truro, will also undertake regular sessions at the West Cornwall Hospital, Penzance, and at Falmouth Hospital. In addition, he may be required to visit other hospitals in the clinical area as determined by the Regional Board from time to time. Twelve copies of applications, stating date of birth, qualifications and experience, together with the names and addresses of two referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park Road, Bristol, 8, not later than March 23, 1957. (9990)

THE UNITED OXFORD HOSPITALS

Applications are invited for the post of
CONSULTANT ANAESTHETIST
to the United Oxford Hospitals, whole-time or maximum part-time. Experience in anaesthesia for thoracic surgery desirable. Applications (ten copies), stating age, qualifications and experience, should reach the undersigned not later than March 16, 1957.—E. J. R. Burrough, Administrator, Radcliffe Infirmary, Oxford. (9510)

WHITTINGTON HOSPITAL, London, N.19

ANAESTHETIC REGISTRAR
required. Post recognized for F.F.A. and D.A. Hospital may be visited by direct appointment. Application forms obtainable from, and returnable to, the Secretary, 46, Cholmeley Park, N.6, by March 11, 1957. (9815)

BEDFORD GENERAL HOSPITAL (439 beds)

Applications required for the post of
ANAESTHETIC REGISTRAR
Vacant early April. Resident or non-resident. Post recognized for the D.A. and F.F.A.R.C.S. This appointment gives good general experience with adequate consultant supervision. Application forms obtainable from, and returnable to, Group Secretary, Bedford Group H.M.C., 3, Kimbolton Road, Bedford. Closing date March 8, 1957. (9511)

NORTHERN REGIONAL HOSPITAL BOARD (Scotland)

Applications are invited for the whole-time post of
SENIOR REGISTRAR IN ANAESTHETICS
Duties mainly at the Royal Northern Infirmary and Raigmore Hospital, Inverness. Forms of application, and further particulars, may be obtained from the undersigned, with whom applications should be lodged by Saturday, March 16, 1957.—A. M. Fraser, M.D., Secretary and Administrative Medical Officer, Office of the Northern Regional Hospital Board, Raigmore, Inverness. (9632)

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

REGISTRAR
whole-time, resident, required in Department of Anaesthesia at Edgware General Hospital (715 beds). Vacant March 25, 1957. Hospital may be visited by direct appointment with Medical Director. Application forms obtainable from, and returnable to, Group Secretary, Hendon Group Hospital Management Committee, Edgware General Hospital, Edgware, Middlesex, by March 12, 1957. (9975)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the post of whole-time
ANAESTHETIC REGISTRAR
to the Southampton Group of Hospitals for work in the General and Special Units, vacant in May. Special facilities for working for Primary or Final F.F.A.R.C.S. Forms of application may be obtained from the undersigned, to whom they should be returned not later than March 13, 1957. —Frank Jennings, Group Secretary, Southampton Group Hospital Management Committee, Bullar Street, Southampton. (9925)

HULL (A) GROUP HOSPITAL MANAGEMENT COMMITTEE

JUNIOR HOSPITAL MEDICAL OFFICER in Anaesthetics
(recognized for D.A. and F.F.A.) required for duties at hospitals in the Group. Excellent experience. Non-resident. Applications to Group Secretary, Hull Royal Infirmary. (9602)

SOUTH-EAST NORTHUMBERLAND HOSPITAL MANAGEMENT COMMITTEE

JUNIOR ANAESTHETIST
Junior Hospital Medical Officer or Senior House Officer grade, according to experience. Post recognized under Fellowship and Diploma Regulations of the Faculty of Anaesthetists. Applications, with names of two referees, to Group Secretary, Preston Hospital, North Shields. (9802)

NELSON HOSPITAL, Kingston Road, Merton, S.W.20

RESIDENT ANAESTHETIST
(Senior House Officer grade)
Post approved for the D.A. Vacant end of March. Applications, stating age, experience and qualifications, with copies of testimonials and the name of one referee, should be sent to the Group Secretary, St. Helier Hospital, Carshalton, Surrey. (9864)

EDINBURGH, 9. ELSIE INGLIS MATERNITY HOSPITAL (68 beds)

Applications are invited from registered medical practitioners for the post of
SENIOR HOUSE OFFICER (Anaesthetics)
(preferably resident)
The appointment is recognized for the Diploma in Anaesthetics and is for six months in the first instance from April 1, 1957. Salary £745 per annum, less £150 per annum in respect of residential emoluments. In addition to the obstetric work at Elsie Inglis Maternity Hospital, there are ample opportunities for experience as a trainee anaesthetist at general surgical and gynaecological operations in other hospitals in the Group. Applications, with copies of testimonials, to the Medical Superintendent, Edinburgh Southern Hospitals Group, 21, Hill Street, Edinburgh, 2. (9991)

GLASGOW ROYAL INFIRMARY

SENIOR HOUSE OFFICER IN ANAESTHETICS
Write, giving three names for reference, not later than March 9, 1957, to the Secretary, Board of Management for Glasgow Royal Infirmary and Associated Hospitals, 135, Buchanan Street, Glasgow, C.1. (4050)

HOPE HOSPITAL

Salford Hospital Management Committee

Applications are invited for the post of
SENIOR HOUSE OFFICER ANAESTHETIST
(Resident)
In the theatres about 3,000 operations are performed per annum. Two Consultant Anaesthetists are available. The hospital is recognized for the D.A. and F.F.A.R.C.S. Applications, stating the names and addresses of two referees, should be forwarded to the Secretary, Hope Hospital, Salford, 6, as soon as possible. (9940)

NORTHAMPTON GENERAL HOSPITAL (482 beds)

Vacancy April 1 next for
SENIOR HOUSE OFFICER
Department of Anaesthetics. Six months' appointment in first instance. Recognized for D.A. and F.F.A.R.C.S. Applications, as soon as possible, to S. G. Hill, Superintendent. (9256)

KETTERING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Kettering General Hospital, Kettering (130 beds)

Applications are invited from registered medical practitioners for the appointment of
SENIOR HOUSE OFFICER IN ANAESTHETICS
Post vacant April 14, 1957. Post recognized for D.A. Applications, giving details of qualifications and experience, and enclosing copies of three recent testimonials, to be sent to the Group Secretary at the above address. (9921)

LEICESTER ROYAL INFIRMARY

Applications are invited for the post of
SENIOR HOUSE OFFICER (Anaesthetics)
Vacant April 1. The appointment includes duties at both the Leicester Royal Infirmary and the Leicester General Hospital. Recognized for D.A., F.F.A. Applications, stating age, qualifications and experience, with copies of recent testimonials, to Group Secretary, Leicester No. 1 Hospital Management Committee, the Leicester Royal Infirmary, immediately. (9834)

NOTTINGHAM GENERAL HOSPITAL

SENIOR HOUSE OFFICER (Anaesthetics)
required about March 17, 1957. The post is recognized for the D.A. and the F.F.A.R.C.S. This is a busy general hospital giving experience in all branches of surgery. Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Group Secretary. (9226)

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL GENERAL HOSPITAL GROUP

South Devon and East Cornwall Hospital, Plymouth

SENIOR HOUSE OFFICER IN ANAESTHETICS
Vacancies April 1, May 1, 1957. Recognized for the D.A. and F.F.A.R.C.S. Applicants to state which date they will be available. The appointment will be for a period of twelve months.—F. Hall, Deputy Group Secretary, 7, Nelson Gardens, Stoke, Plymouth. (9964)

SHREWSBURY HOSPITAL GROUP

Royal Salop Infirmary and Copthorne Hospital, Shrewsbury (586 beds)

RESIDENT ANAESTHETIST
(Senior House Officer)
Post recognized for F.F.A.R.C.S. Registrar also employed. Vacant immediately. Applications and copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury. (9547)

SOUTHERN GENERAL HOSPITAL Glasgow, S.W.1

SENIOR HOUSE OFFICER IN ANAESTHETICS
The post is approved for D.A. and F.F.A. Write immediately to Secretary, Board of Management for Glasgow South-Western Hospitals, 1301, Govan Road, Glasgow, S.W.1, naming two referees. (9939)

SUNDERLAND AREA HOSPITAL MANAGEMENT COMMITTEE

RESIDENT ANAESTHETIST
is required for duties at hospitals in the above Group. Senior House Officer grade. Post vacant immediately. The post offers good practical experience under the supervision of the visiting anaesthetists. The hospitals are recognized for the F.F.A.R.C.S. and the D.A. In addition, every opportunity is given to attend lectures at the neighbouring university 12 miles away. Apply to the Group Secretary, Sunderland Area Hospital Management Committee, General Hospital, Sunderland, naming two referees. (9941)

WARRINGTON GENERAL HOSPITAL (344 beds)

Applications are invited for the post of
RESIDENT ANAESTHETIST (Male or Female)
(Graded as Senior House Officer)
The hospital is recognized for the D.A. examination. Salary is £745 per annum, less a deduction of £150 per annum for residential emoluments. Applications, stating qualifications and experience, should be sent to Henry L. Boot, Group Secretary, Warrington and District Hospital Management Committee, c/o General Hospital, Warrington, Lancs. (9067)

NORTH MIDDLESEX HOSPITAL Edmonton, N.18

RESIDENT HOUSE ANAESTHETIST
(House Officer)
required for April 16. Six months' appointment. Post recognized for D.A. and F.F.A. R.C.S. Whole-time duties under supervision of Senior Anaesthetists. Application, stating age, nationality, qualifications, experience, with copies of recent testimonials, to Secretary of Hospital by March 12. (4010)

Anaesthetics—contd.

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 next for
HOUSE OFFICER
Department of Anaesthetics. Recognized for D.A. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (9258)

BACTERIOLOGY

GLASGOW VICTORIA HOSPITALS

SENIOR HOUSE OFFICER
required for the Sectoral Bacteriological Laboratory at Mearnskirk Hospital, with duties in the Victoria Infirmary. No previous laboratory experience necessary. Applications, with names of two referees, to the Secretary, Board of Management for Glasgow Victoria Hospitals, 24, St. Vincent Place, Glasgow, C.1. (9976)

CARDIOLOGY

NATIONAL HEART HOSPITAL
Westmoreland Street, W.1
(with which is associated the Institute of Cardiology)

CONSULTANT SURGEON
The Board of Governors invite applications for the post of Consultant Surgeon. The successful candidate will be required to attend up to four sessions weekly. Although the Board will make the appointment immediately, the duties of the post will not commence until the surgical facilities, which form part of the approved extension of the hospital, are provided. Applications (10 copies), stating age, qualifications, present appointments (giving number of sessions), and the names of three referees, should be sent to me not later than Saturday, March 30, 1957.—Robert G. E. Whitney, Secretary to the Board. (9922)

CASUALTY

OXFORD REGIONAL HOSPITAL BOARD

REGISTRAR
in Accident and Orthopaedic Surgery to the hospitals of Northampton Hospital Management Committee. The duties will mainly be at Northampton General Hospital, but will include work at the Mansfield Orthopaedic Hospital. The appointment will be for one year and eligible for a second year. The successful candidate may live in or near the Northampton General Hospital. Applications, on forms obtainable from the Secretary, Registrars Committee, 43, Banbury Road, Oxford, should reach him by March 16. (9513)

UPTON HOSPITAL, Slough

REGISTRAR
required for busy Casualty Department, resident or non-resident. Experience provided in orthopaedic and hand surgery. Forms of application from, and returnable to, Secretary, Windsor H.M.C., Alma Road, Windsor, by March 10. (9514)

BOOTLE HOSPITAL, Liverpool, 20

Applications are invited for a post as
CASUALTY OFFICER (J.H.M.O. grade)
at this busy hospital. Post vacant from March 1, 1957. Apply to Secretary, Walton Hospital, Liverpool, 9, giving details of experience, qualifications, age, date of registration, and names of two referees. (9929)

CENTRAL WIRRAL GROUP

Clatterbridge Hospital, Bebington, Cheshire
(819 beds)

JUNIOR HOSPITAL MEDICAL OFFICER
Casualty /Orthopaedics (resident) or locum required
Salary in accordance with current terms and conditions of service, i.e., £775 by £50 to £1,075 per annum, less £170 per annum for residence. Application forms, obtainable from Group Secretary, to be returned as soon as possible. (9752)

HUDDERSFIELD ROYAL INFIRMARY
(285 beds)

Applications are invited for the post of
CASUALTY OFFICER
The post, which is resident, is recognized under the Fellowship Regulations, and will be graded either J.H.M.O. or S.H.O. according to experience. Duties terminate at 7 p.m., with one night weekly on call. Applications for the appointment, which will be vacant on April 1, 1957, should be accompanied by copies of three recent testimonials and addressed to the undersigned.—H. J. Johnson, Group Secretary, the Royal Infirmary, Huddersfield. (4037)

IMPORTANT NOTICE

APPOINTMENTS

Medical practitioners are requested

not to apply

for any appointment specified in this notice or for any appointment under an authority referred to in this notice without first communicating with the Secretary of the British Medical Association, B.M.A. House, Tavistock Square, London, W.C.1, or with the Medical Secretary of the Irish Medical Association, 10, Fitzwilliam Place, Dublin, to learn the views of the Association regarding the terms and conditions of service pertaining to the appointment:

REPUBLIC OF IRELAND,
PORTIUNCULA HOSPITAL,
BALLINASLOE, CO. GALWAY.
Resident and Visiting Medical Staff.

By Order of the Council,
A. MACRAE,
February 26, 1957. Secretary.

COVENTRY AND WARWICKSHIRE HOSPITAL
Coventry

SENIOR ASSISTANT (J.H.M.O. grade)
for accident and orthopaedic wards. Appointment for one year in first instance, renewable annually up to four years. Recognized F.R.C.S. Previous experience desirable. Resident accommodation available. Applications to Hospital Secretary. (9865)

ROYAL ALEXANDRA INFIRMARY, Paisley

JUNIOR HOSPITAL MEDICAL OFFICER
required for Casualty Department. Applicants must be fully registered for one year. Applications to Group Medical Superintendent. (4051)

ROYAL SUSSEX COUNTY HOSPITAL
Brighton, 7

SENIOR CASUALTY OFFICER (J.H.M.O.)
non-resident, required. Vacant now. Recognized for F.R.C.S. Applications, stating usual particulars, and the names of two referees, to the Administrative Officer. (4052)

DREADNOUGHT SEAMEN'S HOSPITAL
Greenwich, S.E.10

CASUALTY AND RECEIVING ROOM OFFICER
(non-resident)
required on March 19. Post recognized by the Royal College of Surgeons. Salary £745 per annum. Applications, stating age, nationality, qualifications and experience, with the names of three recent referees, should be sent to the Secretary at the above address immediately. (4044)

LAMBETH HOSPITAL, Brook Drive, S.E.11

Applications are invited for appointment as
CASUALTY OFFICER
falling vacant on April 1, 1957. The position is graded as S.H.O., and is recognized for the F.R.C.S. The successful candidate will be required to do locum duties from March 18, 1957. Application forms from the Physician Superintendent. (9503)

BARNET GENERAL HOSPITAL
Wellhouse Lane, Barnet Herts

CASUALTY OFFICER
(Senior House Officer grade)
Appointment for one year. Non-resident. Hours: 9 a.m. to 6 p.m., Monday to Friday; 9 a.m. to 1 p.m. Saturday. Post vacant April 1. Applications, stating age, qualifications and experience, with copies of two testimonials, to be sent to the Hospital Secretary. (4040)

ESSEX COUNTY HOSPITAL, Colchester
(185 beds)

Applications invited for post of
SENIOR HOUSE OFFICER
to Casualty and E.N.T. Departments. Post tenable for six months or one year. Recognized for F.R.C.S. Applications, with copies of three testimonials, to Group Secretary, Colchester H.M.C., 14, Pope's Lane, Colchester, Essex. (9992)

GENERAL HOSPITAL, Nottingham

Applications are invited for the post of
SENIOR HOUSE OFFICER (Casualty)
Duties to commence early March. Establishment three. Recognized for F.R.C.S. Post offers wide experience of casualty work. Applications, stating age, nationality, qualifications and experience, together with copies of testimonials, to be sent to the Secretary, General Hospital, Nottingham. (9803)

IPSWICH AND EAST SUFFOLK HOSPITAL
Heath Road Wing (280 beds), Ipswich

Applications invited for post of
NON-RESIDENT CASUALTY OFFICER (S.H.O.)
Vacant March 7, 1957. Day-time duties only, offering opportunity of study for higher examinations. Applications, with full details, to the Hospital Secretary (9515)

KING EDWARD VII HOSPITAL, Windsor

CASUALTY OFFICER
required, Senior House Officer grade. Department forms part of Accident Service of Windsor Group. Duties include House Surgeon to E.N.T. and Eye Departments. Previous experience in treatment of acute injuries desirable. Applications, stating age, qualifications (with date), nationality, with copies of recent testimonials, to Secretary. (9866)

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 next for
SENIOR HOUSE OFFICER
Casualty Department, to work in conjunction with House Officer or another Senior House Officer, Casualty Department. Recognized for F.R.C.S. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent (9260)

NORTH WIRRAL HOSPITAL MANAGEMENT COMMITTEE

Victoria Central Hospital, Liscard Road, Wallasey

Applications are invited from registered medical practitioners for the appointment of
RESIDENT CASUALTY OFFICER
(Senior House Officer grade)
Salary £745 per annum, less £150 p.a. for board, lodging, and other services. The Casualty Out-Patient Department is contained in a new large extension recently opened and provides a new Minor Operations Theatre; Consulting Clinics; Physiotherapy; Pharmacy and central laboratory departments. Terms and conditions of service are in accordance with the Regulations of the Ministry of Health. Applications, giving details of age, nationality, qualifications and experience, accompanied by names of three persons to whom reference may be made, to the Administrative Officer, Victoria Central Hospital, Liscard Road, Wallasey, Cheshire. (4008)

SELLY OAK HOSPITAL, Birmingham, 29
(955 equipped beds)

ASSISTANT CASUALTY OFFICER
(Senior House Officer)
Post vacant April 1, 1957. Resident or non-resident. Recognized for F.R.C.S. Applications giving qualifications, experience, age and copies of three recent testimonials, to the Medical Superintendent. (9817)

STOCKPORT AND BUXTON HOSPITAL MANAGEMENT COMMITTEE

Stockport Infirmary

Applications are invited for the post of
SENIOR HOUSE OFFICER
(Non-resident Casualty Officer)
Hours of duty: 8.30 a.m. to 4.30 p.m. Monday to Friday; 8.30 a.m. to 12 noon Saturday. The post is recognized under F.R.C.S. regulations and would suit a candidate wishing to study for higher qualifications. Applications, stating age, qualifications and experience, together with copies of two testimonials, to be addressed to the Secretary, Stockport and Buxton H.M.C., 59B, Shaw Heath, Stockport, Cheshire. (9993)

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Applications invited for the appointment of
SENIOR HOUSE OFFICER
as Casualty Officer and Orthopaedic House Surgeon at Great Western Hospital, Swindon, vacant on March 14. Post recognized for R.C.S. for six months of year's training under Fellowship regulations. Work of accident and orthopaedic department, associated with Nuffield Orthopaedic Centre (Wingfield-Morris Orthopaedic Hospital), Oxford, includes large number of industrial injuries. Salary £745 per annum, less £150 per annum for residential emoluments. Full details, and names of three referees, to Secretary, 7, Okus Road, Swindon, Wilts, as soon as possible. (9481)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

Casualty—contd.

PADDINGTON GREEN CHILDREN'S HOSPITAL (St. Mary's Hospital, W.2)

Applications are invited for the post of

CASUALTY OFFICER

Post-registration appointment, non-resident. House officer's grade, tenable for six months as from May 1, 1957. Applications, stating age, nationality, qualifications (with dates), and experience, with copies of three recent testimonials, should reach the Secretary not later than March 16, 1957. (9893)

LEICESTER ROYAL INFIRMARY

Applications are invited for the pre-registration post of

HOUSE SURGEON

for casualty duties, vacant April 1. The department is a new one staffed by one Consultant and two Senior House Officers. Applications, in writing, stating age, experience and qualifications, together with copies of recent testimonials, to the Group Secretary, Leicester Royal Infirmary, immediately. (Pr.9835)

NORTHAMPTON GENERAL HOSPITAL (482 beds)

Vacancy April 1 next for

HOUSE OFFICER

Casualty Department, to work in conjunction with Senior House Officer, Casualty Department. Recognized for F.R.C.S. and for medical pre-registration. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (Pr.9263)

CHEST AND TUBERCULOSIS

(see also THORACIC SURGERY)

BROMPTON HOSPITAL, S.W.3

Applications invited for post of

MEDICAL REGISTRAR (Whole-time)

Salary within the Registrar grade. The appointment is for one year, with eligibility for re-appointment. Candidates must hold the M.R.C.P. Diploma or the M.B. of a university. Applications, stating age, qualifications (with dates), nationality, and appointments held, together with copies of testimonials, by March 9, 1957, to Kenneth A. F. Miles, House Governor. (9738)

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

WHOLE-TIME MEDICAL REGISTRAR

resident or non-resident, required at Colindale Hospital, Colindale Avenue, London, N.W.9 (300 beds), where all types of chest diseases are treated. Experience in diseases of the chest desirable. The hospital, which is within easy access of the centre of London, may be visited by direct appointment with the Physician Superintendent. Application forms obtainable from, and returnable to, Group Secretary, Edgware General Hospital, Edgware, by March 9, 1957. (9633)

MANCHESTER REGIONAL HOSPITAL BOARD

Applications are invited for the resident post of

MEDICAL REGISTRAR

The duties are mainly in connection with pulmonary tuberculosis and include both clinic and hospital work. There are also non-tuberculous chest disease clinics and a general medical out-patients' clinic. There are opportunities for experience in bronchoscopy and for clinical research. Good accommodation is available. Applications, together with the names and addresses of two referees, should be addressed to the Group Secretary, Burnley General Hospital, Burnley. (9943)

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

SENIOR MEDICAL REGISTRAR

required at Harefield Hospital, Harefield, Middlesex. Applicants should hold a higher qualification in medicine and should have experience in general medicine and diseases of children as well as of the diagnosis and modern methods of treatment of tuberculosis. The post will normally be held for about two years and the successful candidate will then be given the opportunity of serving for a further two years, approximately, as a Senior Registrar at Uxbridge Chest Clinic, 259, High Street, Uxbridge, Middlesex. Hospital and clinic may be visited by direct appointment. Application forms obtainable from, and returnable to, Secretary, Harefield and Northwood Group Hospital Management Committee, Mount Vernon Hospital, Northwood, Middlesex, by March 9, 1957. (9759)

NORTHERN REGIONAL HOSPITAL BOARD (Scotland)

Applications are invited for the whole-time post of

REGISTRAR

at the County Hospital, Stornoway (Tuberculosis and Infectious Diseases). A house is available for a married officer. Further particulars and forms of application are available from the undersigned, with whom applications should be lodged by March 16, 1957.—A. M. Fraser, M.D., Secretary and Administrative Medical Officer, Office of the Northern Regional Hospital Board, Raigmore, Inverness. (9634)

SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of

SENIOR REGISTRAR IN CHEST MEDICINE

to the tuberculosis early treatment and assessment unit at Joyce Green Hospital, in the Dartford group, available on April 17. The duties will be both in-patient and in Chest Clinics associated with the unit in both the Dartford and Sidcup and Swanley groups of hospitals. Candidates must have had wide experience in General Medicine and in the diagnosis and treatment of pulmonary tuberculosis. The appointment will be in accordance with the Terms and Conditions of Service of Hospital Medical and Dental Staff (England and Wales), and will be for one year in the first instance. Applications, giving particulars of age, qualifications and experience (with relevant dates), together with the names and addresses of three referees, to be sent to the Secretary, Registrars Committee, South-East Metropolitan Regional Hospital Board, 11, Portland Place, W.1, not later than March 16, 1957. (9836)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Epsom Group Hospital Management Committee

Applications are invited for whole-time

REGISTRAR IN CHEST MEDICINE

to the Epsom and Dorking Chest Clinics. Immediate vacancy. Duties will include sessions at one or both clinics. Additionally, person appointed will be Registrar at Cheam Sanatorium, where there are 53 beds for the treatment of cases of pulmonary tuberculosis, and will have the day-to-day care of patients under the various Consultants concerned. Successful candidate will be required to live within easy access of Cheam Sanatorium. Applicants may visit units by arrangement with Consultant Chest Physician. Application forms may be obtained from Group Secretary, Epsom District Hospital, Dorking Road, Epsom (send stamped addressed foolscap envelope), for completion and return within 14 days. (9867)

UXBRIDGE CHEST CLINIC
High Street, Uxbridge, Middlesex

MEDICAL REGISTRAR

required for duties including clinical work, also supervision of patients at Hillingdon Hospital (30 beds). Candidates require experience in general medicine and some experience in treatment of tuberculosis and diseases of chest. Further details from Physician in Charge. Clinic may be visited by direct appointment. Application forms obtainable from, and returnable to, Group Secretary, Uxbridge Group H.M.C., The Furze, Pield Heath Road, Hillingdon, Middlesex, by March 12. (9837)

BARRASFORD SANATORIUM (95 beds)

RESIDENT MEDICAL OFFICER
(J.H.M.O. or S.H.O. according to experience)

Tenure for J.H.M.O. appointment limited to four years in the first instance. A three-bedroomed house is available. Enquiries to Physician Superintendent, and applications, with names and addresses of two referees, to the Group Secretary, General Hospital, Hexham, Northumberland, within 14 days. (9944)

READING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Peppard Chest Hospital, Henley-on-Thames (236 beds)

Applications are invited from registered medical practitioners for the post of

JUNIOR HOSPITAL MEDICAL OFFICER

The hospital deals with all types of chest disease in medical and surgical wards. Previous experience in resident hospital appointments is desirable. Single accommodation is available. Applications, stating age, qualifications and experience, with the names of two referees, should be forwarded to the Group Secretary, 3, Craven Road, Reading. (9650)

ST. WULSTAN'S HOSPITAL, Malvern (230 beds)

RESIDENT MEDICAL OFFICER (J.H.M.O.)

required. Good experience in modern treatment of pulmonary tuberculosis. Work mainly medical, but hospital has own Thoracic Surgical Unit. Applications to Physician Superintendent. (9344)

PADDINGTON GENERAL HOSPITAL
Harrow Road, W.9

Applications are invited for the undermentioned post:

SENIOR HOUSE OFFICER
(Tuberculosis) (non-resident)

In addition to the 51 T.B. and non-T.B. pulmonary beds, the post entails the care of 32 medical beds. Applications, stating age, qualifications, experience, together with names and addresses of two referees, to be sent to Secretary of Committee by March 11. (9667)

CASTLE HILL SANATORIUM, Cottingham (221 beds) and RAYWELL SANATORIUM, near Cottingham (48 beds)

SENIOR HOUSE OFFICER

to work under supervision of Consultant Chest Physician in Group Sanatoria with Major Thoracic Surgery Unit and Mass Radiography and laboratory facilities. Application forms from Group Secretary, Hull (B) Group H.M.C., De la Pole Hospital, Willerby, E. Yorkshire. (9227)

ST. HELENS AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Eccleston Hall Hospital (75 beds)
Delph Lane Hospital, Whiston (34 beds)

SENIOR HOUSE OFFICER

Applications are invited for the post of Senior House Officer at the above hospitals. The person appointed will work under the supervision of the Consultant Chest Physician for the Group. The work comprises all types of tuberculosis and includes chest clinic work. Good residential accommodation for a single person, male or female, is available. The post may be non-resident, subject to residence within reasonable distance from the hospitals. Applications to be forwarded to N. Richards, Group Secretary, Whiston Hospital, Prescot. (4035)

BROMPTON HOSPITAL, S.W.3

Applications invited for the post of

RESIDENT HOUSE PHYSICIAN

Three vacancies. Two vacancies for six months from May 1, 1957. Duties include work in out-patient department and wards. One vacancy for nine months from May 1, 1957. The first three months at Brompton Hospital Sanatorium, Frimley, and the following six months at the hospital in London covering work in out-patient department and wards. Salary at the rate of £525 per annum. Applications, stating age, qualifications (with dates), nationality, and appointments held, together with copies of testimonials, by March 9, 1957, to Kenneth A. F. Miles, House Governor. (9617)

SOUTHFIELD HOSPITAL, Liberton, Edinburgh

RESIDENT HOUSE OFFICER (Male or Female)

required for above hospital on April 1, 1957. The post is in the professorial unit of the University Department of Tuberculosis and Diseases of the Respiratory System. The post is recognizable for pre-registration purposes and would also suit anyone studying for higher qualifications. Applications to be submitted within two weeks of appearance of this notice to Secretary, Board's Office, City Hospital, Greenbank Drive, Edinburgh. (4009)

DERMATOLOGY

OXFORD REGIONAL HOSPITAL BOARD

CONSULTANT DERMATOLOGIST
(part-time for 7 sessions a week)

to the hospitals of the Swindon/Cirencester area. A new general hospital for the Swindon area is being built. Applications (12 copies), giving experience, qualifications, and the names of three referees, should reach the Secretary, 43, Banbury Road, Oxford, by March 23. (9517)

CENTRAL MIDDLESEX HOSPITAL
Park Royal, N.W.10

SENIOR REGISTRAR

required for two or possibly more sessions in the Dermatological Department. Previous experience in dermatology essential. Post now vacant. Hospital may be visited by direct appointment. Application forms from, and returnable to, Group Secretary, Hospital Management Committee, at Central Middlesex Hospital, Park Royal, N.W.10, by March 12, 1957. (9969)

LEEDS REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN DERMATOLOGY

at the Bradford Royal Infirmary (57 dermatological beds), large out-patients' department, over 4,000 new cases per annum. Non-resident. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 21, 1957. (9868)

Dermatology—contd.

SOUTH-EASTERN REGIONAL HOSPITAL BOARD, Scotland

REGISTRAR IN DERMATOLOGY

at the Royal Infirmary of Edinburgh. Apply, giving particulars of age, qualifications and previous experience, together with the names of two referees, to the Secretary, South-Eastern Regional Hospital Board, 11, Drumsheugh Gardens, Edinburgh, 3, by March 23, 1957. (4053)

THE UNIVERSITY OF LEEDS—UNITED LEEDS HOSPITALS

Applications are invited for appointment as

SENIOR REGISTRAR AND TUTOR IN DERMATOLOGY

at a salary on the scale £1,100 by £100 to £1,400 a year. Applications (three copies), stating date of birth, qualifications, details of present and previous appointments (with dates) and experience of teaching, together with the names of three referees, should reach the Registrar, The University, Leeds, 2 (from whom further particulars may be obtained), not later than March 25, 1957. (4012)

NORTHAMPTON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Harborough Road Hospital (112 beds)

Vacancy April 1 for

DERMATOLOGICAL HOUSE OFFICER

Duties include some House Physician work and also some responsibility for dermatological patients at Northampton General Hospital. Six months' appointment in first instance. Please apply to S. G. Hill, General Hospital, Northampton. (9504)

EAR, NOSE, AND THROAT, ETC.

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

CONSULTANT E.N.T. SURGEON

Six or seven half-days a week, Edgware General Hospital, Edgware, Middlesex (638 beds). Post vacant July, 1957. Hospital may be visited by direct appointment. Application forms obtainable from, and returnable to, Secretary, North-West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, before April 8, 1957. (4041)

SALISBURY GROUP HOSPITAL MANAGEMENT COMMITTEE

Salisbury General Hospital

Applications are invited for the appointment of

REGISTRAR

to the Ear, Nose and Throat Department. Post recognized for D.L.O. and F.R.C.S. Application forms obtainable from, and must be returned to, Group Secretary, Odstock Hospital, Salisbury, Wilts, by March 11. (9805)

SOUTH-EASTERN REGIONAL HOSPITAL BOARD, Scotland

REGISTRAR IN E.N.T. SURGERY

at the Royal Infirmary of Edinburgh. Apply, giving particulars of age, qualifications and previous experience, together with the names of two referees, to the Secretary, 11, Drumsheugh Gardens, Edinburgh, 3, by March 23, 1957. (4054)

THE UNITED LIVERPOOL HOSPITALS

Liverpool Ear, Nose and Throat Infirmary

Applications are invited for temporary appointment to a post of

REGISTRAR IN OTORHINOLARYNGOLOGY

to take up duty as soon as possible for the period to September 30, 1957. The vacancy for the year beginning October 1, 1957, will be advertised in the summer of 1957, and the person holding the temporary appointment will be free to apply. The tenancy of a furnished flat may be available if required for the successful applicant. Apply, by March 15, 1957, on form obtainable from the Secretary, the United Liverpool Hospitals, 80, Rodney Street, Liverpool, 1. (4057)

WESTERN REGIONAL HOSPITAL BOARD

Applications are invited for the following appointments, which will be for one year in the first instance:

REGISTRAR in Ear, Nose and Throat Surgery based at the Royal Infirmary, Glasgow, for duties at Law Hospital, Carluke.

REGISTRAR in Ear, Nose and Throat Surgery based at the Royal Infirmary, Glasgow.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of three referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent Street, Glasgow, C.2, by March 16, 1957. (9988)

BEAUMONT HOSPITAL, Lancaster

RESIDENT SENIOR HOUSE OFFICER

for newly-constructed E.N.T. ward and theatre unit (22 beds). Relevant out-patient attendances during 1956, 5,100 (1,973 new patients). Applications, with names of two referees, to Group Secretary, Royal Lancaster Infirmary, Lancaster. (9977)

BRIGHTON AND LEWES HOSPITAL MANAGEMENT COMMITTEE GROUP HOSPITALS (78 beds)

SENIOR HOUSE OFFICER

for duties in the E.N.T. Department. Vacant mid-March. Recognized for F.R.C.S. and D.L.O. Applications, with details of experience, etc., together with the names of two referees, to be sent to the Administrative Officer, Royal Sussex County Hospital, Brighton, 7. (9945)

KENT AND CANTERBURY HOSPITAL Canterbury (277 beds)
Ear, Nose and Throat and Eye Departments

SENIOR HOUSE OFFICER

Salary £745 per annum. Post vacant end of March, 1957. Approved for F.R.C.S. and special diplomas. Applications, together with copies of two recent testimonials, to be addressed to the Hospital Secretary at the above hospital. (9325)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

North Riding Infirmary (Eye, Ear, Nose and Throat Centre), Middlesbrough (120 beds)

Applications are invited for the appointment of

SENIOR HOUSE OFFICER (E.N.T.)

at the above-named hospital, which is recognized for the F.R.C.S. and the D.L.O. Applications, with full details and giving two names for reference, should be addressed to the Hospital Secretary. (8951)

HIGH WYCOMBE AND DISTRICT WAR MEMORIAL HOSPITAL (165 beds)

HOUSE SURGEON (E.N.T. and General)

required. Pre- or post-registration. Arrangements in hand for recognition for D.L.O. Apply, with names of two referees, to Group Secretary, St. Mary's Cottage, High Wycombe. (9550)

GERIATRICS

CHICHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE

J.H.M.O. IN MEDICINE

required, working under supervision of Consultant Physicians, with main duties in Geriatric Unit (150 beds), St. Richard's Hospital (400 beds). Facilities available for investigation and treatment of acute and chronic disease, pre-admission assessment, and follow-up clinic. Resident or non-resident. N.H.S. terms and conditions of service. Salary £775 by £50 to £1,075 per annum. Applications, stating age, nationality, qualifications and experience, and naming two referees, to Group Secretary, 174, Broyle Road, Chichester. (9806)

NORTH MANCHESTER HOSPITAL MANAGEMENT COMMITTEE

Crumpsall Hospital, Manchester, 8

Applications are invited for the non-resident post of

JUNIOR HOSPITAL MEDICAL OFFICER

in this active Geriatric Unit. Vacant May 1, 1957. Applications, with two referees, by March 11, 1957, to Group Secretary, Crumpsall Hospital, Manchester, 8. (9869)

KETTERING AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Applications are invited from registered medical practitioners for the appointment of

SENIOR HOUSE OFFICER

to the Geriatric Unit in this area. There are 160 active geriatric beds in the unit in three hospitals. Post vacant April 1, 1957. National scale of salary. Applications, together with the names and addresses of two referees, to Group Secretary, Central Administration Offices, General Hospital, Kettering. (9923)

LEYTONSTONE (No. 10) HOSPITAL GROUP

Applications are invited from fully registered medical practitioners for the post of

HOUSE OFFICER

in the Geriatric Unit, Whipps Cross Hospital, London, E.11. The post offers excellent scope for persons interested in this specialty, as the most modern methods of geriatric treatment are employed. Application forms, from the Hospital Secretary, to be returned by March 11, 1957 (9933)

INFECTIOUS DISEASES

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

WHOLE-TIME ASSISTANT PHYSICIAN
in Infectious Diseases (S.H.M.O. grade)

required at the Western Hospital, Seagrave Road, S.W.6. Applicants should have had experience in infectious diseases in this country and preferably also in the management of respiratory complications of acute poliomyelitis. The hospital has been designated a Regional Centre for this treatment. Applications by letter (five copies), giving date of birth, qualifications, experience, three referees, to Secretary (S.11), S.W. Met. R.H.B., 11a, Portland Place, W.1, by March 30, 1957. Applicants may visit the hospital by local arrangement. (9889)

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

ASSISTANT PHYSICIAN (Infectious Diseases)

whole-time, Senior Hospital Medical Officer grade, South Middlesex Hospital, Mogden Lane, Isleworth (145 beds—approximately 90 for fevers, one surgical ward, and ophthalmic unit). Successful candidate required to live within easy reach of hospital. Post offers excellent opportunity for postgraduate study for higher degrees. Hospital may be visited by direct appointment. Application forms obtainable from, and returnable to, Secretary, North-West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, before April 11, 1957. (9901)

WELSH REGIONAL HOSPITAL BOARD

REGISTRAR, INFECTIOUS DISEASES

based Hill House Isolation Hospital, Swansea (130 beds), to serve Glantawe H.M.C. Resident. Subject to review end of first year. Application forms from S.A.M.O., Temple of Peace, Cathays Park, Cardiff, within 14 days. (4033)

MONSALL HOSPITAL
Newton Heath, Manchester, 10

SENIOR HOUSE OFFICERS

Two resident posts for infectious diseases wards. Hospital is Regional Centre for poliomyelitis. Applications, with names of two referees, to Deputy Group Secretary, Monsall Hospital, from whom further particulars may be obtained. (9946)

SOUTHAMPTON CHEST HOSPITAL (261 beds)

SENIOR HOUSE OFFICER

required in March, to be responsible for Infectious Diseases Unit. The duties are such as to suit a candidate reading for higher examinations. The Unit is sited at a hospital possessing up-to-date tuberculosis and thoracic surgical units, whilst the Southampton Group of Hospitals as a whole affords excellent opportunities for study and experience in all branches of medicine. Applications, together with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar Street, Southampton. (9664)

IPSWICH GROUP HOSPITAL MANAGEMENT COMMITTEE

St. Helen's Hospital, Ipswich
(100 beds for Infectious Diseases, Pulmonary Tuberculosis, and Long-stay Orthopaedics. The area Chest Clinic is in the hospital)

HOUSE PHYSICIAN

required (post-registration appointment). Accommodation available for married man. Applications to John Williams, Group Secretary, at the Ipswich and East Suffolk Hospital (Anglesea Road Wing), Ipswich. (9552)

I.D. HOSPITAL, Hawkhead Road, Paisley

HOUSE PHYSICIAN (Pre-registration)

required immediately. Applications to Group Medical Superintendent, Royal Alexandra Infirmary, Paisley. (Pr 9706)

MEDICINE

LEEDS REGIONAL HOSPITAL BOARD

REGISTRAR IN GENERAL MEDICINE

for duties at St. James's Hospital, Leeds (706 general medical beds). Duties those of R.M.O. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 14, 1957. (9870)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

Medicine—contd.

SOUTH-EASTERN REGIONAL HOSPITAL BOARD, Scotland

REGISTRAR IN MEDICINE

in the Royal Infirmary of Edinburgh. Apply, giving particulars of age, qualifications and previous experience, together with the names of two referees, to the Secretary, 11, Drumsheugh Gardens, Edinburgh, 3, by March 23, 1957. (4055)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Winchester Group Hospital Management Committee

REGISTRAR IN MEDICINE (Registrar grade)

required at the Royal Hampshire County Hospital, Winchester. Vacant June 1, 1957. Accommodation available for married candidate. Forms of application, obtainable from the Group Secretary, Royal Hampshire County Hospital, must be completed and returned not later than March 18. (4080)

THE UNITED SHEFFIELD HOSPITALS

Royal Infirmary Unit

Applications invited for the post of non-resident

REGISTRAR or SENIOR HOUSE OFFICER in General Medicine

at the above hospital. Grade according to qualifications and experience. Post vacant March 25, 1957. Applications, stating age, qualifications and experience, with the names of three referees, should be sent, not later than March 6, 1957, to the Chief Administrative Officer, the United Sheffield Hospitals, West Street, Sheffield, 1. (9693)

WEST MIDDLESEX HOSPITAL, Isleworth

CLINICAL ASSISTANT—Medicine

Local G.P.s only. Monday or Friday a.m. or Tuesday a.m. (Diabetics). £175 per annum. Applications, with names of two referees, to Group Secretary by March 11, 1957. (9898)

NOTTINGHAM NO. 1 HOSPITAL MANAGEMENT COMMITTEE

Newark General Hospital

JUNIOR HOSPITAL MEDICAL OFFICER (Medical)

required for above hospital, situated on Great North Road approximately 20 miles from Nottingham. Post offers good experience. The Consultant Staff attending Newark Hospital are on one or more of the Nottingham hospitals. During next few months a flat will be available as married quarters, but in meantime single accommodation can be provided. Salary £775 by £50 to £1,075. Duties to commence as soon as possible. Applications, giving names of three referees, should be sent to Group Secretary, Nottingham No. 1 H.M.C., General Hospital, Nottingham. (9492)

WATERLOO HOSPITAL, Liverpool, 22

Applications are invited for the post of

RESIDENT MEDICAL OFFICER (J.H.M.O. grade)

at the above hospital. Successful applicant will share duties with another officer of equal grading. Apply to the Secretary, Walton Hospital, Liverpool, 9, stating age, qualifications, experience, names of two referees, and date when available for duties. (9966)

DARTFORD HOSPITAL MANAGEMENT COMMITTEE

SENIOR HOUSE OFFICER (Specialty General Medicine)

required for the Dartford Group of Hospitals from March 20, 1957. A furnished flat might be made available for a married man. Applications, with full particulars and the names of two referees, should be sent to the Group Secretary, The Bow Arrow Hospital, Dartford, Kent. (9493)

DERBYSHIRE ROYAL INFIRMARY, Derby (416 beds)

HOUSE PHYSICIAN (Pre-registration) or SENIOR HOUSE OFFICER (General Medicine)

Vacant early March. Apply, stating full particulars, with copies of two testimonials, to the Secretary. (9494)

GLASGOW ROYAL INFIRMARY

SENIOR HOUSE OFFICER IN MEDICINE

Write, giving three names for reference, not later than March 9, 1957, to the Secretary, Board of Management for Glasgow Royal Infirmary and Associated Hospitals, 135, Buchanan Street, Glasgow, C.1. (9947)

IPSWICH AND EAST SUFFOLK HOSPITAL Anglesea Road Wing (356 beds)

Applications are invited for the post of

SENIOR HOUSE OFFICER IN GENERAL MEDICINE

vacant on March 18, 1957. The post offers excellent experience and opportunity for working for higher qualifications (M.R.C.P.). There are approximately 50 acute medical beds. Applications, stating age, nationality, together with copies of recent testimonials, to Hospital Secretary by March 4. (9556)

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL GENERAL HOSPITAL GROUP

South Devon and East Cornwall Hospital, Plymouth

SENIOR HOUSE OFFICER IN GENERAL MEDICINE

Vacant July 1, 1957.—F. Hall, Deputy Group Secretary, 7, Nelson Gardens, Stoke, Plymouth. (9965)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

Hemlington Hospital, Middlesbrough

Applications are invited for the appointment of

SENIOR HOUSE OFFICER (Medical)

at the above hospital. The hospital, which is situated in the country within easy access of Middlesbrough, and with good transport facilities, has a Medical Unit of 60 beds, 40 of which are for acute cases. Applications, together with two names for reference, should be addressed to the Hospital Secretary. (9505)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

Stockton and Thornaby Hospital, Stockton-on-Tees

Applications are invited for the appointment of

SENIOR HOUSE OFFICER (Medicine)

which will become vacant at the end of March at the above hospital. Applications, stating age, qualifications, experience, together with names for reference, should be addressed to the Hospital Secretary. (9520)

TORQUAY DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Torbay Hospital, Torquay

SENIOR RESIDENT HOUSE OFFICER (Medicine)

required mid-April, 1957. There is a complement of six Resident House Officers. Applications, stating qualifications, age, nationality, with copy testimonials (quoting ref. F.955/78), to the Group Secretary, Torbay Hospital, Torquay, S. Devon. (9407)

BATTERSEA GENERAL HOSPITAL Battersea Park, S.W.11

HOUSE PHYSICIAN

House Officer grade. Resident. Not Pre-registration. Vacant early March. Apply Hospital Secretary, enclosing copies of two recent testimonials. (9818)

BOLINGBROKE HOSPITAL Wandsworth Common, S.W.11

HOUSE PHYSICIAN (resident)

Vacant May 6, 1957. Open to registered practitioners and pre-registration candidates. Apply Hospital Secretary, enclosing copies of three recent testimonials, by March 13, 1957. (9819)

ST. ALFEGE'S HOSPITAL (367 beds) Greenwich, S.E.10

HOUSE PHYSICIAN

Vacant approx. March 25, 1957. Six months' appointment. National salary and conditions. Applications and testimonials to Secretary, G. and D./H.M.C., at above hospital. (9668)

SHREWSBURY HOSPITAL GROUP

Royal Salop Infirmary (216 beds)

HOUSE PHYSICIAN

Pre-registration or otherwise. Vacant April 24, 1957. Applications, with copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury. (9838)

WORCESTER ROYAL INFIRMARY

HOUSE PHYSICIAN (Pre-registration or otherwise) required at this busy general hospital of 213 beds. The post offers wide and varied experience. Applications to the Hospital Secretary. (9978)

HIGHLANDS GENERAL HOSPITAL Winchmore Hill, N.21

HOUSE PHYSICIAN

Vacant March 19, 1957. Preference given to applicants seeking pre-registration post under Medical Act, 1950. Applications, with copies of three testimonials and name and address of one referee, to Hospital Secretary. (Pr.4002)

ST. NICHOLAS HOSPITAL Tewson Road, Plumstead, S.E.18

HOUSE PHYSICIAN

Vacant mid-March. Recognized for pre-registration purposes. Apply to Group Secretary, Memorial Hospital, Woolwich, S.E.18. (Pr.9724)

BARROW AND FURNESS HOSPITAL MANAGEMENT COMMITTEE

North Lonsdale Hospital

Applications are invited for the resident post of

HOUSE OFFICER (Medical)

at the North Lonsdale Hospital, Barrow-in-Furness. Recognized for pre-registration. Available in March, 1957. Applications to Group Secretary, 105, Abbey Road, Barrow-in-Furness. (Pr.9621)

DORSET COUNTY HOSPITAL, Dorchester (105 beds)

HOUSE PHYSICIAN (Male or Female)

required for resident, pre-registration post vacant April 1 and tenable for six months. Applications, stating age, experience, nationality, and qualifications, together with copy testimonials, to Group Secretary, West Dorset H.M.C., Damers Road, Dorchester, Dorset, immediately. (Pr.9683)

GEORGE ELIOT HOSPITAL, Nuneaton

HOUSE OFFICER IN GENERAL MEDICINE

Pre-registration. Applications to Hospital Secretary, George Eliot Hospital, Nuneaton. (Pr.9482)

ILFORD AND BARKING GROUP HOSPITAL MANAGEMENT COMMITTEE

There will be a vacancy for a

HOUSE PHYSICIAN

at King George Hospital, Eastern Avenue, Ilford, on March 22, 1957. First or second post pre-registration. The post will be tenable for six months. Applications, giving full particulars and accompanied by testimonials, should be sent to the undersigned within seven days of the appearance of this advertisement.—H. F. Harris, Group Secretary. (Pr.9495)

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE

Queen Alexandra Hospital (78 medical beds)

HOUSE PHYSICIAN

Pre-registration. Vacant March 15. Applications, stating age, experience and qualifications, together with the names of two referees, should be forwarded as soon as possible to E. H. Hurst, St. Mary's Hospital, Milton Road, Portsmouth. (Pr.9274)

ROYAL SUSSEX COUNTY HOSPITAL (312 beds)

TWO HOUSE PHYSICIANS

required beginning of April and May. Pre-registration. Applications, stating usual particulars, and naming two referees, to the Administrative Officer, Royal Sussex County Hospital, Brighton, 7. (Pr.9979)

NEUROLOGY

THE NATIONAL HOSPITALS FOR NERVOUS DISEASES

Applications are invited from registered medical practitioners for the appointment of

HOUSE PHYSICIAN

at the National Hospital, Queen Square, W.C.1. This post carries the grade of Registrar. The appointment will be for one year and will be renewed in exceptional circumstances. Applications, with names of three referees, to be sent to the undersigned not later than March 4, 1957.—H. Ewart Mitchell, Secretary to the Board of Governors, the National Hospitals for Nervous Diseases, Queen Square, W.C.1. (9694)

SOUTH-EASTERN REGIONAL HOSPITAL BOARD, Scotland

REGISTRAR

in the Medical Neurology Unit at the Northern General Hospital, from April 1, 1957. This unit is associated with the University of Edinburgh for purposes of undergraduate and postgraduate teaching and research. Apply, giving particulars of age, previous experience and qualifications, together with the names of two referees, to the Secretary, 11, Drumsheugh Gardens, Edinburgh, 3, by March 23, 1957. (4056)

OBSTETRICS AND GYNAECOLOGY

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

St. Stephen's Hospital, Chelsea, S.W.10

OBSTETRIC AND GYNAECOLOGICAL REGISTRAR (non-resident)

Application forms obtained from the Group Secretary, St. Luke's Hospital, Sydney Street, London, S.W.3, to be returned within 14 days of date of advertisement. (Enclose F.S.A.E.) (4022)

Obstetrics and Gynaecology—contd.

CROYDON GROUP HOSPITAL MANAGEMENT COMMITTEE

OBSTETRIC AND GYNAECOLOGICAL REGISTRAR

for duties mainly at Mayday Hospital (80 osbtetric and 47 gynaecological beds), and St. Mary's Maternity Hospital (33 obstetric beds). Post recognized for M.R.C.O.G. Vacant May 19, 1957. Application forms obtainable from the undersigned.—George A. Paines, Group Secretary, General Hospital, London Road, Croydon. (9872)

NEWCASTLE REGIONAL HOSPITAL BOARD

REGISTRAR OBSTETRICIAN AND GYNAECOLOGIST

whole-time, resident, for duties at Dilston Hall Maternity Home, Hexham (50 beds) and Newcastle General Hospital (100 obstetrical and gynaecological beds). Initial appointment at Dilston Hall. The post is recognized for the M.R.C.O.G., and Newcastle General Hospital is a teaching unit. Applications, with names and addresses of three referees, to S.A.M.O., Regional Hospital Board, Benfield Road, Newcastle upon Tyne, 6, by March 14, 1957. (9873)

NORTH-EASTERN REGIONAL HOSPITAL BOARD, Scotland

Applications are invited for the post of

SENIOR REGISTRAR IN OBSTETRICS AND GYNAECOLOGY

Main duties in Aberdeen General and Aberdeen Special Hospitals. Candidates should have experience in their specialty and preferably hold an appropriate higher qualification. Applications, giving two names for reference, should be submitted by March 22, 1957, to the Secretary, 1, Albyn Place, Aberdeen, from whom further particulars may be obtained. (9948)

UNITED LEEDS HOSPITALS/LEEDS REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN OBSTETRICS AND GYNAECOLOGY

Halifax Group of Hospitals. Duties mainly at Halifax General Hospital (108 obstetric and 41 gynaecology beds). Subject to staisfactory progress, the person appointed will be given an opportunity of undertaking at least one year's training at the Teaching Hospital. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 21, 1957. (9874)

WEST MIDDLESEX HOSPITAL, Isleworth

CLINICAL ASSISTANT
Obstetrics and Gynaecology

Local G.P.s only. Wednesdays a.m. £175 per annum. Applications, with names of two referees, to Group Secretary by March 11, 1957. (9897)

BARROW AND FURNESS HOSPITAL MANAGEMENT COMMITTEE
Obstetric and Gynaecology Department

Applications are invited for the resident post of

SENIOR HOUSE OFFICER

at the Risedale Maternity Hospital, Barrow-in-Furness. Post available from April 1, 1957. Hospital approved for D.R.C.O.G. Applications to the Group Secretary, 105, Abbey Road, Barrow-in-Furness. (9675)

MONTAGU HOSPITAL, Mexborough, and Annexe (198 beds—22 Obstetric, 15 Gynaecology)

SENIOR HOUSE OFFICER
(Obstetrics and Gynaecology)

required from April 6, 1957. Residential emoluments £150 p.a. Applications to Secretary, Hospital Management Committee, "Fern Bank," Doncaster Road, Rotherham. (9820)

ST. MARGARET'S HOSPITAL, Epping

RESIDENT SENIOR HOUSE OFFICER
(Obstetrics)

vacancy occurring April 1. Post recognized for D.(Obst.)R.C.O.G. Salary on national scale less deduction for board, lodging, etc. Busy general hospital with easy access to London. Applications, with two recent testimonials, to the Group Secretary, Epping Group H.M.C., "Oak Cottage," The Plain, Epping, Essex, by March 8, 1957. (9524)

SOUTH MANCHESTER H.M.C.
Withington Hospital, Manchester, 20

SENIOR HOUSE OFFICER
(Obstetrics and Gynaecology)

Vacant on April 1, 1957. The hospital takes part in undergraduate medical teaching, and the post is recognized in obstetrics and gynaecology for M.R.C.O.G. purposes. An application form should be obtained from the Group Secretary at the hospital and returned within 7 days of the appearance of this advertisement. (4017)

STAFFORDSHIRE GENERAL INFIRMARY
Stafford (175 beds—recovery unit 32 beds)

SENIOR HOUSE OFFICER
(Obstetrics and Gynaecology)

Resident post. Applications to Group Secretary, Stafford H.M.C., 13, Foregate Street, Stafford. (9526)

WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE

Southlands Hospital, Shoreham-by-Sea, Sussex

SENIOR HOUSE OFFICER
(Obstetrics and Gynaecology)
(55 obstetric beds, 29 gynaecological beds)

Applications are invited for the above appointment, tenable for one year, and recognized for the M.R.C.O.G. The duties are mainly concerned with gynaecological beds, relieving Registrar and Obstetrical House Officer in Obstetrical Department. Post vacant now. Applications, giving full particulars of qualifications and experience, together with the names of two referees to whom application may be made, to be sent immediately to the Secretary, Southlands Hospital.—A. V. Oakton, Group Secretary. (9525)

HAMMERSMITH HOSPITAL AND INSTITUTE OF OBSTETRICS AND GYNAECOLOGY
Du Cane Road, London, W.12

RESIDENT HOUSE SURGEON (Obstetrics) required May 1. Post recognized for M.R.C.O.G. Age, qualifications, experience, names two referees, to Secretary, Board of Governors, by March 11. (9930)

HASTINGS AND ST. LEONARDS, BUCHANAN HOSPITAL (94 beds)

HOUSE SURGEON IN GYNAECOLOGY
(28 gynaecological beds)

Post recognized for M.R.C.O.G. Vacant March 23, 1957, for six months. Candidates for pre-registration service (surgery) can be considered. Apply, giving names and addresses of three referees, to Hospital Administrator. (9839)

HOSPITAL OF ST. CROSS, Rugby, and ST. MARY'S HOSPITAL, Harborough Magna

HOUSE OFFICER IN GYNAECOLOGY AND OBSTETRICS

Not pre-registration. Applications to Hospital Secretary, Hospital of St. Cross, Rugby. (9484)

READING COMBINED HOSPITALS

Area Department of Obstetrics and Gynaecology (100 beds)

Applications are invited from registered and provisionally registered medical practitioners (male and female) for resident appointment of

OBSTETRICAL HOUSE SURGEON

vacant April 10 and tenable for six months. Post recognized for Diplomas of Royal College of Obstetricians and Gynaecologists. Write, stating age, qualifications (with dates), nationality, and present post, with copy of one recent testimonial, to Secretary, Battle Hospital, Reading. (9927)

THE UNITED BIRMINGHAM HOSPITALS

The Birmingham Maternity Hospital

Applications are invited from registered medical practitioners for the post of

RESIDENT OBSTETRIC HOUSE SURGEON

vacant May 1, 1957. The appointment is recognized for the M.R.C.O.G. and D.R.C.O.G. Application forms, obtainable from the House Governor, the Birmingham and Midland Hospitals for Women, Showell Green Lane, Sparkhill, Birmingham, 11, to be returned not later than March 14, 1957.—G. A. Phalp, Secretary. (9679)

UNITED BIRMINGHAM HOSPITALS

Birmingham and Midland Hospital for Women, Showell Green Lane, Sparkhill, Birmingham, 11

Applications are invited from registered medical practitioners for the post of

RESIDENT GYNAECOLOGICAL HOUSE SURGEON

for duty with the Professorial Unit, from June 1, 1957. The appointment is recognized for the M.R.C.O.G. and D.R.C.O.G. Application forms obtainable from the House Governor at the above address, to be returned not later than March 30, 1957.—G. A. Phalp, Secretary. (9678)

WILLESBOROUGH HOSPITAL
near Ashford, Kent

Applications are invited for the appointment of **HOUSE SURGEON (Obstetrics and Gynaecology)** which is recognized for pre-registration service and for the D.R.C.O.G. Diploma. Salary £425, £475 or £525 a year, according to experience, less £125 a year for residential emoluments. Applications, stating qualifications, experience, and the names and addresses of two referees, to the Group Secretary, South-East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone. (4029)

FARNBOROUGH HOSPITAL, Kent (800 beds)

HOUSE OFFICER

required in Obstetric and Gynaecological Department (100 beds), May 1. Recognized for D.Obst. and M.R.C.O.G. Consideration given to second term pre-registration candidates. Apply, stating age, qualifications (with dates), and experience, and naming three referees, to Administrative Officer by March 12. (9896)

BLACKPOOL VICTORIA HOSPITAL (353 beds)

HOUSE OFFICER, Obstetrics and Gynaecology

Pre-registration post, recognized for M.R.C.O.G., available on May 1, 1957. 25 obstetrical and 32 gynaecological beds, also busy out-patient clinics. Applications, stating age, experience, and the names and the addresses of two referees, should be sent to the Hospital Secretary. (Pr.9807)

SHREWSBURY HOSPITAL GROUP

Cross Houses Hospital (34 maternity beds)

OBSTETRIC HOUSE SURGEON

Pre-registration post. Vacant April 5, 1957. Applications, with copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury. (Pr.9562)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

Hemlington Hospital, Middlesbrough (274 beds)

Applications are invited for the appointment of

HOUSE OFFICER (Gynaecology)

at the above hospital. The post is recognized for pre-registration service under the Medical Act, 1950. Arrangements will be made for the House Officer to attend Ward rounds, Clinics, and undertake duties at the Middlesbrough Maternity Hospital. Applications, stating full details and giving two names for reference, should be addressed to the Hospital Secretary. (Pr.8933)

OPHTHALMOLOGY

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

PART-TIME ASSISTANT OPHTHALMOLOGIST(S) (S.H.M.O. grade)

required for sessions at the following London County Council Vision Clinics: St. Christopher's School Treatment Centre, 40a, York Road, S.W.11 (Thursday p.m. or Friday p.m., weekly); Streatham S.T.C., 55, Lewin Road, S.W.16 (Monday a.m. and p.m., weekly); Putney S.T.C., 2, Clarendon Drive, S.W.15 (Wednesday a.m., weekly). Candidates, who may apply for any or all of the above sessions, should be interested and experienced in children's work. Duties will be undertaken in collaboration with the Divisional Medical Officer of the London County Council. Successful candidate(s) will be required to take annual leave during the school vacations. Applications by letter (five copies), giving date of birth, qualifications, experience, three referees, to Secretary (S.1), S.W. Met. Regional Hospital Board, 11a, Portland Place, W.1, by March 30, 1957. Applicants may visit the various clinics by direct arrangement with the L.C.C. Divisional Medical Officer at "Southlands," Shuttleworth Road, S.W.11. (9875)

LEEDS REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN OPHTHALMOLOGY at the Royal Eye and Ear Hospital, Bradford (34 ophthalmic beds). Any additional duties as may be required at other hospitals in the Bradford (A) and (B) Hospital Management Committee Groups. Non-resident. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 21, 1957. (9876)

THE UNITED LIVERPOOL HOSPITALS

St. Paul's Eye Hospital

Applications are invited for temporary appointment to a post of

REGISTRAR IN OPHTHALMOLOGY

to take up duty as soon as possible for the period to September 30, 1957. The vacancy for the year beginning October 1, 1957, will be advertised in the summer of 1957, and the person holding the temporary appointment will be free to apply. The tenancy of a furnished flat may be available, if required, for the successful applicant. Apply, by March 15, 1957, on form obtainable from the Secretary, the United Liverpool Hospitals, 80, Rodney Street, Liverpool, 1. (4058)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

ORTHOPAEDICS

MANCHESTER REGIONAL HOSPITAL BOARD

CONSULTING TRAUMATIC AND ORTHOPAEDIC SURGEON

additional part-time (eight half-days weekly), to the Lancaster and Kendal Hospitals, etc. (mainly Royal Lancaster Infirmary, 200 beds). Wide experience essential. Appointee to live near Lancaster. Application forms from Senior Administrative Medical Officer to the Board, Cheetwood Road, Manchester, 8, to be returned by March 19, 1957. (4031)

ROYAL FREE HOSPITAL, LONDON, AND NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the post of
SENIOR ORTHOPAEDIC REGISTRAR (non-resident)

at the Royal Free Hospital and Heatherwood Orthopaedic Hospital, Ascot, Berks. One and a half to two years will be spent at the Royal Free Hospital and a similar period at Heatherwood Orthopaedic Hospital (200 beds), which is a Regional Orthopaedic Centre. Experience may be gained in long-term Orthopaedic Surgery, and the successful candidate would be expected to participate in the Windsor Accident Service whilst at Heatherwood. Application forms may be obtained from the Secretary, Board of Governors, Royal Free Hospital, Gray's Inn Road, W.C.1, and should be returned by March 21, 1957. (9736)

SHEFFIELD REGIONAL HOSPITAL BOARD

St. George's Hospital, Lincoln (204 beds) (recognized for training for F.R.C.S.)

WHOLE-TIME RESIDENT REGISTRAR (Orthopaedics)

with Out-patient Clinic duties at the County Hospital, Lincoln, required. There are 42 orthopaedic beds. Appointment for one year in first instance. Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, by March 11, 1957, giving age, nationality, qualifications, present and previous appointments (with dates), naming three referees. (9840)

SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Canterbury, Isle of Thanet and South-East Kent Groups of Hospitals

Applications are invited for an appointment as
REGISTRAR IN ORTHOPAEDIC SURGERY

to the Canterbury and South-East Kent groups. A similar appointment to the Canterbury and Isle of Thanet groups has already been made and duties will rotate annually between the two appointments, which offer experience in traumatic work and in general orthopaedic surgery, including long-stay cases. The appointments will be in accordance with the Terms and Conditions of Hospital Medical and Dental Staff (England and Wales). Applications, giving particulars of age, qualifications and experience (with relevant dates), together with the names and addresses of two referees, to be sent to the Secretary, Registrars Committee, South-East Metropolitan Regional Hospital Board, 11, Portland Place, London, W.1, not later than March 16, 1957. (9841)

SOUTHEND-ON-SEA HOSPITAL

TEMPORARY ORTHOPAEDIC REGISTRAR

(full-time) required for duties at hospitals in the Southend-on-Sea Group. Post vacant March 14, 1957. Applications, accompanied by copies of recent testimonials, to be sent to the undersigned as soon as possible.—J. C. Field, Secretary. (9972)

WEST MIDDLESEX HOSPITAL, Isleworth

CLINICAL ASSISTANT—Surgery (Orthopaedics)

Local G.P.s only. Monday or Tuesday p.m., Wednesday or Friday a.m. £175 per annum. Applications, with names of two referees, to Group Secretary by March 11, 1957. (9899)

SEAMEN'S HOSPITALS GROUP

Albert Dock Orthopaedic and Fracture Hospital, Alnwick Road, E.16

SENIOR HOUSE OFFICER

for Receiving Room duties required on March 31. Post, which is normally resident, is recognized by the Royal College of Surgeons, and provides excellent experience in a wide variety of traumatic conditions received from the adjacent dock and and from shipping in the Port of London. Salary £745. Applications, stating age, nationality, qualifications and experience, with the names of two recent referees, should be sent to the Secretary, Dreadnought Seamen's Hospital, Greenwich, not later than March 9. (9971)

BOSTON COMBINED HOSPITALS (319 beds)*

London Road Hospital

SENIOR HOUSE OFFICER

Mainly fractures and general surgery. One of two posts. Resident. Apply, giving age, qualifications, posts held, and two names for reference, to the Hospital Secretary, London Road Hospital, Boston, Lincs. (9878)

ST. PETER'S HOSPITAL (late Botley's Park War Hospital), Chertsey, Surrey (430 beds)

ORTHOPAEDIC HOUSE SURGEON

Vacant now. S.H.O. or H.O. (Intern) grade. 100 orthopaedic beds. Post recognized for F.R.C.S. and pre-registration service. Preference given to provisionally registered candidates. Salary in accordance with terms and conditions of National Health Service. Applications, together with names and addresses of referees, to be sent to the Physician Superintendent, St. Peter's Hospital, Chertsey, as soon as possible. (8348)

SHEFFIELD NO. 3 HOSPITAL MANAGEMENT COMMITTEE

King Edward VII Orthopaedic Hospital (144 beds), Ravelin Valley Road, Sheffield

Applications are invited from registered medical practitioners for the post of
SENIOR HOUSE OFFICER (Resident)

at the above hospital. The post, which is normally held for one year in the first instance, will be subject to the terms and conditions of service for hospital medical staff. Salary £745 per annum. Emolument charge £150 per annum. Applications, with names of two referees, to Group Secretary, Sheffield No. 3 H.M.C., Lodge Moor Hospital, Sheffield, 10. (9948)

BLACK NOTLEY HOSPITAL, Braintree, Essex (516 beds)

Applications invited for post of
HOUSE OFFICER (Orthopaedic Surgery)

Duties include care of cases from London Hospital Orthopaedic Department. First, second, third or pre-registration post, tenable for six months. Recognized for F.R.C.S. Applications, with copies of three testimonials, to Group Secretary, Colchester H.M.C., 14, Pope's Lane, Colchester, Essex. (9994)

WESTWOOD HOSPITAL, Beverley, Yorkshire (229 acute beds)

ORTHOPAEDIC HOUSE SURGEON (1st, 2nd, or 3rd post)

Vacant end February. Offers good opportunity for general experience in busy acute general hospital. Approved pre-registration post. Fully registered practitioners may apply. Recognized for F.R.C.S. Apply Group Secretary. (9821)

BARNET GENERAL HOSPITAL Wellhouse Lane, Barnet, Herts

RESIDENT HOUSE SURGEON Department of Orthopaedic Surgery

Pre-registration post now vacant. Detailed applications, with copies of two recent testimonials, to Hospital Secretary. (Pr.7715)

BRIDGE OF EARN HOSPITAL, Perthshire

HOUSE SURGEON

required for Fracture and Orthopaedic Unit. Post recognized for pre-registration hospital service, and by Royal College of Surgeons under regulations for the F.R.C.S. Applications, giving full details of age, qualifications, experience, and the names of two referees, should be sent to the Group Medical Superintendent, Perth Royal Infirmary, Perth. (Pr.9980)

HIGH WYCOMBE AND DISTRICT WAR MEMORIAL HOSPITAL (165 beds)

PRE-REGISTRATION ORTHOPAEDIC AND GENERAL HOUSE SURGEON

required. Apply immediately, with names of two referees, to Group Secretary, St. Mary's Cottage, High Wycombe. (Pr.9564)

NORFOLK AND NORWICH HOSPITAL Norwich

JUNIOR ORTHOPAEDIC HOUSE SURGEON

(Male or female), H.O. status. Two House Officers employed in the department. This is a pre-registration post. Membership of a Medical Defence Society is a condition of appointment. Applications, giving full details, with names of two referees, to Group Secretary, H.M.C., St. Stephen's Road, Norwich, immediately. (Pr.9808)

NORTHAMPTON GENERAL HOSPITAL (482 beds)

Vacancy April 1 for
FRACTURE AND ORTHOPAEDIC HOUSE OFFICER

Recognized for F.R.C.S. and for pre-registration. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (Pr.9285)

ROYAL ALEXANDRA INFIRMARY, Paisley

HOUSE SURGEON (Pre-registration)

required immediately for Orthopaedic and Fracture Unit. Applications to Group Medical Superintendent. (Pr.9704)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

General Hospital, Ayresome Green Lane, Middlesbrough (309 beds)

Applications are invited for the appointment of
HOUSE OFFICER (Orthopaedics)

at the above hospital. The appointment is recognized for pre-registration service under the Medical Act, 1950, and includes some duties in the Casualty Department, which is under the supervision of a full-time Senior Casualty Officer. Applications, stating full details, and giving two referees, should be addressed to the Hospital Secretary. (Pr.9237)

PAEDIATRICS

THE HOSPITAL FOR SICK CHILDREN Great Ormond Street, London, W.C.1

Applications are invited for three posts of whole-time
ASSISTANT MEDICAL REGISTRARS (Registrar grade)

Two vacant in April and one on May 18, 1957. Further particulars and forms of application, which must be returned not later than March 18, 1957, may be obtained from the undersigned.—H. F. Rutherford, House Governor and Secretary. (9750)

THE HOSPITAL FOR SICK CHILDREN Great Ormond Street, London, W.C.1

Applications are invited for the post of
SURGICAL REGISTRAR

Falling vacant on July 1, 1957. The appointment is whole time, non-resident, and is graded as that of a Senior Registrar. Full particulars and form of application, which must be returned not later than Monday, April 8, 1957, are obtainable from the undersigned.—H. F. Rutherford, House Governor and Secretary. (4003)

WEST MIDDLESEX HOSPITAL, Isleworth

CLINICAL ASSISTANT—Paediatrics

Thursdays p.m. £175 per annum. Applications, with names of two referees, to Group Secretary by March 11, 1957. (9900)

THE HOSPITAL FOR SICK CHILDREN Great Ormond Street, London, W.C.1

There will be a vacancy on June 15, 1957, for a
HOUSE PHYSICIAN (Senior House Officer)

Further particulars and form of application, which must be returned not later than April 8, 1957, are obtainable from the undersigned.—H. F. Rutherford, House Governor and Secretary. (4004)

CAERNARVON AND ANGLESEY HOSPITAL MANAGEMENT COMMITTEE

St. David's Hospital, Bangor (Specialist Hospital for Women and Children)

Applications are invited for the post of
RESIDENT PAEDIATRIC OFFICER (Senior House Officer grade)

Preference will be given to candidates with previous experience in neo-natal and premature infant care. The paediatric unit is recognized for the D.C.H. Salary according to scale. Applications, stating age, qualifications and experience, together with the names and addresses of two referees, should be forwarded within ten days of the appearance of this advertisement to the Group Secretary, Plas Gwyn, Ffriddoedd Road, Bangor. (9981)

NOTTINGHAM CHILDREN'S HOSPITAL (136 beds) (Recognized for the D.C.H.)

Applications are invited for the post of
SENIOR HOUSE OFFICER (Surgical)

which is now vacant. The post is tenable for six months or a year by agreement. Applications, with copies of two testimonials, should be sent to the Secretary, Nottingham Children's Hospital, Chestnut Grove, Nottingham. (9995)

QUEEN MARY'S HOSPITAL FOR CHILDREN Carshalton, Surrey (General Children's Hospital of 700 beds)

HOUSE PHYSICIAN (Senior House Officer)

required, care of acute medical, rheumatism and poliomyelitis beds. Applications, stating age, qualifications and experience, together with copies of three testimonials, should reach the Group Secretary by March 16, 1957. (9842)

SHRODELLS HOSPITAL, Watford

Applications are invited for the post of
HOUSE OFFICER

S.H.O. grade, to the Paediatric Unit of 38 beds, to take up duty about March 1. Post recognized for the D.C.H. Applications, together with copies of two recent testimonials, should reach the Medical Officer-in-Charge as soon as possible. (4060)

Paediatrics—contd.

SWINDON AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

St. Margaret's Hospital, Stratton

Applications invited for post of
RESIDENT SENIOR HOUSE OFFICER for Paediatric Unit
Post, recognized for D.C.H., permits time for post-graduate study, vacant March 31. Full details, with names of three referees, to Secretary, 7, Okus Road, Swindon, Wilts, as soon as possible. (9485)

LITTLE BROMWICH GENERAL HOSPITAL
Birmingham, 9

PAEDIATRIC HOUSE PHYSICIAN
(Male/Female)
Vacant April 1, 1957. Recognized for D.C.H., includes duties on Infectious Diseases Wards, Neonatal Department, and Clinics. Apply Physician Superintendent. (9822)

QUEEN MARY'S HOSPITAL FOR CHILDREN
Carshalton, Surrey
A general children's hospital of 700 beds

HOUSE SURGEON (House Officer)
(resident), required for six months (three months' general surgery, three months' E.N.T. and orthopaedics). Applicants must have completed twelve months' pre-registration service. Applications, stating age and qualifications, together with one recent testimonial and the names of two referees, should be submitted to the Group Secretary immediately. (9879)

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

There is a vacancy on April 1 for a
PAEDIATRIC HOUSE OFFICER
Post recognized for D.C.H. and for pre-registration. Six months' appointment in first instance. Person appointed will be required to reside alternately with another Paediatric House Officer, for approximately three-month periods, at Northampton General Hospital and Harborough Road Hospital, Northampton, and while at the latter to accept some responsibility to the Consultants for the supervision of all the beds, allocated as follows: Sub-acute Paediatric 20, Dermatological 16, General Medical 30, Infectious Diseases 46 (mostly children, but including polios). Applications as soon as possible to S. G. Hill, Superintendent. (Pr.9565)

TEES-SIDE HOSPITAL MANAGEMENT COMMITTEE

General Hospital, Ayresome Lane, Middlesbrough (309 beds)

Applications are invited for the appointment of a
HOUSE PHYSICIAN (Paediatrics)
at the above hospital. The Paediatric Unit is a very active one of 60 beds and cots for acute cases and a busy out-patient department. The post is recognized for pre-registration service and for the D.C.H. examination. Applications, stating age, qualifications, experience, and giving two referees, should be addressed to the Hospital Secretary. (Pr.9239)

PATHOLOGY

MANCHESTER REGIONAL HOSPITAL BOARD

South Manchester H.M.C.
Withington Hospital, Manchester, 20

The Board invites applications for the post of
REGISTRAR IN PATHOLOGY
Group Laboratory, Withington Hospital (1,088 beds). The laboratory is recognized for the D.Path. examination, and facilities are available for training in all branches of clinical pathology. Applications, stating age, qualifications, present post, experience, and names of two referees, to be forwarded to the Group Secretary, Withington Hospital, Manchester, 20, to arrive not later than March 16, 1957. (4018)

THE UNITED BIRMINGHAM HOSPITALS

Applications are invited for the appointment of
REGISTRAR IN PATHOLOGY
The successful candidate will take part in a training scheme to be instituted in collaboration with the division of pathological studies, University of Birmingham, providing for experience in all branches of pathology and work in various specialized hospitals within the United Hospitals. Further information concerning the appointment and forms of application may be obtained from the Secretary, United Birmingham Hospitals, Queen Elizabeth Hospital, Edgbaston, Birmingham, 15, and should be returned by March 16, 1957. (9949)

ELIZABETH GARRETT ANDERSON HOSPITAL
Euston Road, N.W.1
(Royal Free Hospital Group)

APPOINTMENT OF RESIDENT PATHOLOGIST
Applications are invited from registered women medical practitioners for the post of Resident Pathologist. Salary in accordance with Ministry of Health scale for Senior House Officers. The appointment is for six months in the first instance. Duties to commence April 1, 1957. Applications, with copies of three recent testimonials, should be sent to the Secretary, Elizabeth Garrett Anderson Hospital, as soon as possible. (4062)

UNIVERSITY COLLEGE HOSPITAL
Gower Street, W.C.1

Applications are invited for the post of
RESIDENT PATHOLOGIST
(Grade, Senior House Officer)
in the Department of Clinical Pathology for one year from June 1, 1957. Applications, with names of two referees, to Administrator and Secretary by March 18, 1957. (9932)

BATH HOSPITAL MANAGEMENT COMMITTEE

RESIDENT PATHOLOGIST
(Senior House Officer grade)
required at St. Martin's Hospital. Duties mainly in Area Blood Bank at that hospital with duties at the Regional Blood Bank, Bristol, and at Bath Central Laboratory. Applications, stating age, qualifications and experience, with names of two referees, to Group Secretary, Manor Hospital, Bath. (9880)

GENERAL HOSPITAL, Rochford

Applications are invited for the appointment of a
SENIOR HOUSE OFFICER (Clinical Pathology)
Post tenable for one year and recognized for Diploma in Pathology. Previous experience in pathology not essential, but applicants must have good clinical experience. Post vacant mid-March. Applications, with copies of two recent testimonials, to be sent to the undersigned not later than March 11, 1957.—J. C. Field, Secretary, General Hospital, Rochford, Essex. (4020)

GLOUCESTERSHIRE ROYAL HOSPITAL

RESIDENT CLINICAL PATHOLOGIST
Resident Clinical Pathologist required (Senior House Officer grade). Post, which presents an opportunity of gaining experience in all branches of pathology, is vacant on April 1, 1957. Recognized for the Diploma of Pathology. Applications, naming two referees, to the Group Secretary, Gloucestershire Royal Hospital, Southgate Street, Gloucester. (4061)

NORTHERN IRELAND HOSPITALS AUTHORITY

APPOINTMENT OF SENIOR HOUSE OFFICERS
Applications are invited for two whole-time posts as Senior House Officer in Clinical Pathology; one at Brooke Park Laboratory, Londonderry, and one at the Central Laboratory, Belfast. The terms and conditions will be in accordance with the Authority's application of the Spens Report to Northern Ireland. Applications to be made on a form obtainable (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, 44-46, Queen Street, Belfast, and to be returned not later than March 16, 1957. (9950)

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 for
SENIOR HOUSE OFFICER
in Department of Pathology. Six months' appointment in first instance and afterwards by agreement. Applications, with names of three referees, as soon as possible, to S. G. Hill, Superintendent. (9291)

WESTWOOD HOSPITAL, Beverley, Yorkshire

ASSISTANT PATHOLOGIST
(Senior House Officer Grade)
required in Area Laboratory. Offers experience all branches of Pathology. Salary £745. Detailed applications to Group Secretary. (9823)

PHYSICAL MEDICINE

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

ASSISTANT PHYSICIAN IN PHYSICAL MEDICINE
eight half-days a week, Senior Hospital Medical Officer grade, Watford Peace Memorial Hospital (208 beds), West Herts Hospital, Hemel Hempstead (120 beds), and associated hospitals. Hospitals may be visited by direct appointment. Application forms obtainable from, and returnable to, Secretary, North-West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, before April 3, 1957. (4043)

MANCHESTER REGIONAL HOSPITAL BOARD

Applications invited for the post of
MEDICAL REGISTRAR
in the Rehabilitation Unit and Department of Physical Medicine at the Devonshire Royal Hospital, Buxton. The post offers excellent opportunity in research and the hospital is recognized for the Diploma in Physical Medicine. Applications, stating age, experience and qualifications, together with the names of two referees, to be forwarded to the undersigned.—H. G. Price, Group Secretary, 59B, Shaw Heath, Stockport, Cheshire. (9951)

PLASTIC SURGERY

QUEEN VICTORIA HOSPITAL, East Grinstead
(Plastic Surgery and Jaw Injuries Unit)

Tunbridge Wells Group Hospital Management Committee

RESIDENT HOUSE SURGEON
required March 1, 1957. Appointment for six months, offering considerable opportunity to gain experience in plastic surgery and jaw injuries work. Applications, stating age, and the names of three referees, to Hospital Secretary. (9924)

PSYCHIATRY

THE MIDDLESEX HOSPITAL, W.1

Applications invited for post of
ASSISTANT in Out-patient Department of Psychological Medicine
Two sessions weekly, on the salary scale £1,575 to £2,025. The duties will be mainly concerned with psychotherapy. Applications, naming two referees, should be sent to the Deputy Superintendent by March 30. (9968)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

MEDICAL INSURANCE AGENCY LTD.
Chairman: James Fenton, CBE, MD. General Manager: A. N. Dixon, ACII. Hon. Secretary: Henry Robinson, MD, DL, JP.
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DEFERRED POLICIES for the later benefit of the child.
Substantial rebates. Independent, unbiased advice.

Psychiatry—contd.

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

WHOLE-TIME ASSISTANT PSYCHIATRIST (S.H.M.O. grade)

required at Coldharbour M.D. Hospital, Sherborne, Dorset, in the Coldeast and Tatchbury Mount Group. Candidates should have D.P.M. and experience in psychiatry and hospital administration. Successful candidate will take part in the work of the Group in general and will have opportunities of participating in other local psychiatric services. Seven-roomed bungalow available on estate if desired. If non-resident, person appointed will be required to live near hospital. Applications by letter (five copies), giving date of birth, qualifications, experience, three referees, to Secretary (S.1), S.W. Met. R.H.B., 11a, Portland Place, W.1, by March 23, 1957. Applicants may visit hospital by local arrangement. (9891)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

WHOLE-TIME ASSISTANT PSYCHIATRIST (S.H.M.O. grade)

required at Netherne Hospital, Coulsdon, Surrey. D.P.M. and higher medical qualification required. E.E.G. experience desirable. Applications by letter (five copies), giving date of birth, qualifications, experience, three referees, to Secretary (S.1), S.W. Met. R.H.B., 11a, Portland Place, W.1, by March 23, 1957. Applicants may visit hospital by local arrangement. (9892)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

WHOLE-TIME ASSISTANT PSYCHIATRIST (S.H.M.O. grade)

required at St. James' Hospital, Portsmouth, who will act as Medical Officer in charge of the E.E.G. Dept. Candidates should possess D.P.M., and must have adequate E.E.G. experience. Applications by letter (five copies), giving date of birth, qualifications, experience, three referees, to Secretary (S.1), S.W. Met. R.H.B., 11a, Portland Place, W.1, by March 23, 1957. Applicants may visit hospital by local arrangement. (9890)

EAST ANGLIAN REGIONAL HOSPITAL BOARD

REGISTRAR IN PSYCHIATRY

St. Andrew's Hospital, Thorpe, Norwich (1,250 beds). Full range of modern psychiatric treatments and a number of associated general hospital outpatient clinics. Married or single quarters available. Appointment for one year, renewable for second year. Applications, stating age, experience, and the names of three referees, to the Board's Senior Administrative Medical Officer, 117, Chesterton Road, Cambridge, by March 11, 1957. Candidates invited to visit hospital by direct arrangement with Medical Superintendent. (9881)

LEEDS REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN CHILD PSYCHIATRY

Person appointed will be under training at the Leeds University Department of Psychiatry and associated clinics and will have experience at the Local Authority Child Guidance Department and at a special school for maladjusted boys. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 21, 1957. (9882)

MANCHESTER REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN PSYCHIATRY

in the Bolton and District Group of Hospitals (164 psychiatric beds). Good facilities for both out-patient and in-patient investigation and treatment. Arrangements may later be made for the successful candidate to undertake a period of duty of approximately one year at Prestwich Mental Hospital, near Manchester. Application forms, obtainable from the Senior Administrative Medical Officer, Cheetwood Road, Manchester, 8, should be returned by March 18, 1957. (4032)

MANCHESTER REGIONAL HOSPITAL BOARD

Lancaster Moor Hospital, Lancaster (Regional Mental Hospital)

REGISTRAR

Applications invited for the post of Resident Registrar (male or female). Unfurnished house or flat in hospital grounds available for married applicants; furnished quarters for single persons. Hospital recognized for D.P.M. and facilities provided for attending courses of instruction at neighbouring universities. All modern methods of investigation and treatment carried out. Successful candidate required to work under supervision of Consultant Psychiatrists by rotation, both for in-patient and out-patient work. Apply Medical Superintendent. (9734)

PARKSIDE HOSPITAL MANAGEMENT COMMITTEE, Macclesfield (1,600 beds) (Manchester Regional Board)

Applications are invited for the post of

REGISTRAR IN PSYCHIATRY

Facilities for attending the course for the D.P.M. at Manchester University will be granted and the hospital is recognized by the Conjoint Board for the purpose of the D.P.M. The hospital may be visited by appointment. Applications, with the names of two referees, to be sent to the Medical Superintendent, Parkside Hospital, Macclesfield, Cheshire, to reach him by March 8, 1957. (9497)

ST. GEORGE'S HOSPITAL, Hornchurch Ingrebourne Centre

TEMPORARY PSYCHIATRIC REGISTRAR

required at above unit. Mental hospital experience essential. Candidates should be specially interested in short-term therapy and social psychiatry. Further information may be obtained from the hospital, which may be visited by arrangement (Tel.: Hornchurch 4181). Applications, stating also names of two referees, should be sent to Group Secretary, Romford H.M.C., Oldchurch Hospital, Romford, as soon as possible. (9486)

SOUTH-EAST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for an appointment as a whole-time

REGISTRAR IN PSYCHIATRY

to fill a vacancy in the approved trainee establishment in the Darenth and Stone group of hospitals for duty at Darenth Park, Dartford (for the training of mental defectives), available on April 1, 1957. The hospital is situate 15 miles from London and facilities are made available for post-graduate study. Students from certain teaching hospitals attend for demonstrations. Previous experience in general medicine is desirable. The appointment will be in accordance with the Terms and Conditions of Service of Hospital Medical and Dental Staff (England and Wales), and will be for one year in the first instance. Applications, giving particulars of age, qualifications and experience (with relevant dates), together with the names and addresses of two referees, to be sent to the Secretary, Registrars Committee, South-East Metropolitan Regional Hospital Board, 11, Portland Place, W.1, not later than March 16, 1957. (9843)

WELSH REGIONAL HOSPITAL BOARD

REGISTRAR IN PSYCHIATRY

based St. Cadoc's Hospital, Caerleon, Mon (470 beds). Full range of modern psychiatric treatments and number of associated general hospital outpatient clinics. Resident. Subject to review end first year. Application forms from S.A.M.O., Temple of Peace, Cathays Park, Cardiff, within 14 days. (4034)

LANCASTER MOOR HOSPITAL, Lancaster (Regional Mental Hospital)

J.H.M.O.

Applications invited for the post of resident J.H.M.O. (male or female). Unfurnished flat available for married applicants; furnished quarters for single persons. Hospital recognized for D.P.M. and facilities granted for attending neighbouring universities. All modern methods of investigation and treatment carried out; O.P. clinics. Hospital serving N. Lancashire and Lake District. Post for initial period of four years, but renewable if services satisfactory. Apply Medical Superintendent. (9715)

ABERDEEN ROYAL MENTAL HOSPITAL Aberdeen
KINGSEAT MENTAL HOSPITAL, Newmachar

The undernoted medical staff required for the above Hospitals, where all forms of modern treatment are undertaken and where there is association with the University Department of Mental Health:

SENIOR HOUSE OFFICERS

Salary £745 per annum, less £150 for board, etc.

HOUSE OFFICERS (fully registered)

Salary £525 per annum, less £125 for board, etc.

Locum tenens arrangements may be available in the event of permanent appointments not being made. Applications, giving full details of age, etc., to the appropriate Physician Superintendent. (9599)

RADIOLOGY

NORTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

CONSULTANT RADIOLOGIST

whole-time or maximum sessions, St. Charles' Hospital, Ladbroke Grove, W.10 (581 beds). Hospital may be visited by direct appointment. Application forms obtainable from, and returnable to, Secretary, North-West Metropolitan Regional Hospital Board, 11a, Portland Place, W.1, before April 1, 1957. (4042)

HAMMERSMITH HOSPITAL AND POSTGRADUATE MEDICAL SCHOOL Du Cane Road, London, W.12

WHOLE-TIME NON-RESIDENT REGISTRAR (Radiodiagnostic Department)

required. Age, qualifications, experience, names of two referees, to Secretary, Board of Governors, by March 11. (9931)

QUEEN MARY'S (ROEHAMPTON) HOSPITAL London, S.W.15 (408 beds)

REGISTRAR (Radiology)

required whole-time. National Health Service terms and conditions. Applications (four copies), giving nationality, date of birth, qualifications and experience, present appointments, and names of three referees, should reach the Secretary, Ministry of Health, Division 4(v), Norcross, Blackpool, Lancashire, by March 23, 1957. (4028)

THE UNITED BIRMINGHAM HOSPITALS

Applications are invited for the post of

REGISTRAR IN RADIODIAGNOSIS (non-resident), Registrar grade

for duty in the United Hospitals. The successful candidate will be given an opportunity to attend a course of instruction for the Diploma in Medical Radiology (Diagnostic, Part I) at an approved centre, for which purpose a bursary is provided. Application forms may be obtained from the Secretary, United Birmingham Hospitals, Queen Elizabeth Hospital, Edgbaston, Birmingham, 15, and should be returned to him as soon as possible. (9952)

UNITED LEEDS HOSPITALS/LEEDS REGIONAL HOSPITAL BOARD

SENIOR REGISTRAR IN RADIOLOGY

at the General Infirmary at Leeds (seven notional half-days per week), and the County Hospital, York (four notional half-days per week). Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 21, 1957. (9883)

RADIOTHERAPY

ROYAL MARSDEN HOSPITAL Fulham Road, S.W.3

Applications are invited for a full-time appointment of

REGISTRAR

in the Radiotherapy Department from March, 1957. Salary £850 per annum. Candidates not holding a Diploma in Medical Radiology will be considered, especially if they have a higher qualification in medicine or surgery. Forms of application are obtainable from the House Governor, to whom applications, together with the names of three referees, should be sent by March 8, 1957. (9624)

LEEDS REGIONAL HOSPITAL BOARD

REGISTRAR IN RADIOTHERAPY

for duties at the Regional Radium Institute, Bradford (50 beds), preferably resident. Unit provides a complete Radiotherapy Service for approximately one million population. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 14, 1957. (9884)

THE UNITED LEEDS HOSPITALS

The General Infirmary at Leeds

REGISTRAR

required for the Radiotherapy Centre. Candidates with D.M.R. preferred. The post will be tenable for one year in the first instance and renewable for a second. Terms and conditions of service for hospital medical staff apply. Applications, stating age, qualifications, previous post (with dates), with three names for reference, should be sent to the Sub-Dean, School of Medicine, Leeds, 2, by Wednesday, March 13, 1957. (4049)

SURGERY

KING'S COLLEGE HOSPITAL Denmark Hill, London, S.E.5

Applications are invited for a part-time

CONSULTANT IN SURGERY

for five sessions per week, the post to be combined with that of SURGICAL TUTOR to the Medical School

The successful applicant will devote, in addition, the equivalent of three sessions to his Medical School duties, for which the salary will be £750 per annum. The post is tenable from May 7, 1957. Applications (12 copies), giving details of age, qualifications and experience, and with the names of three referees, should be sent to the undersigned not later than March 30, 1957.—S. W. Barnes, House Governor. (4063)

Surgery—contd.

ST. MARY'S HOSPITAL, Paddington, W.2

PART-TIME CONSULTANT IN GENERAL SURGERY

Applications are invited for the above appointment. The successful candidate will be required to undertake up to five notional half-days per week, with effect from October 1, 1957. Applications (14 copies), stating nationality, date of birth, permanent address, qualifications (with dates), details and National Health Service gradings of previous and present appointments, together with the names and addresses of three referees, should be sent not later than April 20, 1957, to the House Governor, St. Mary's Hospital, London, W.2, from whom further information may be obtained. (4045)

ST. MARY'S HOSPITAL, Paddington, W.2

Applications are invited for the post of non-resident

SURGICAL REGISTRAR

The F.R.C.S. qualification is desirable. The appointment is for a first period of 12 months as from a date to be arranged. The successful candidate will be required to work half-time in the Surgical Unit and half-time in the Casualty Department, and will be expected to take up his duties as soon as possible. Applications, stating nationality, date of birth, permanent address, qualifications (with dates), details and National Health Service gradings of previous and present appointments, together with the names and addresses of three referees, should reach Alan Powditch, House Governor, not later than March 12, 1957. (9689)

CHERTSEY, SURREY, ST. PETER'S HOSPITAL (430 beds)

SURGICAL REGISTRAR

Post vacant April. F.R.C.S. preferred. Hospital may be visited by arrangement with the Physician Superintendent (Tel.: Ottershaw 441). Application forms can be obtained from, and should be returned by March 11 to, Secretary, Woking and Chertsey H.M.C., "Huntington," Chertsey, Surrey. (9845)

CHICHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE (South-West Metropolitan Regional Hospital Board)

Chichester, St. Richard's Hospital (400 beds)

Applications are invited for the post of

RESIDENT SURGICAL OFFICER (Registrar status)

Vacant May 14 next, for one year in first instance. Hospital recognized for F.R.C.S. Salary £850 first year, less £170 per annum for residence. Forms of application from Group Secretary, 174, Broyle Road, Chichester. (9844)

HARROW HOSPITAL Charing Cross Hospital Board of Governors

RESIDENT SURGICAL REGISTRAR

required as from May 1, 1957. Higher qualifications desirable but not essential. Post tenable for one year in the first instance. Furnished flat or single quarters are available. The hospital may be visited by arrangement with the Secretary. Applications, with full particulars and names of three referees, should be sent to the Secretary to the Board, Charing Cross Hospital, W.C.2, by March 9. (9162)

MAIDENHEAD HOSPITAL St. Luke's Road, Maidenhead

RESIDENT SURGICAL REGISTRAR

required. Application forms from, and returnable to, Secretary, Windsor Group H.M.C., Alma Road, Windsor, by March 17. (9846)

MANCHESTER REGIONAL HOSPITAL BOARD

Preston and Chorley Hospital Management Committee

Sharoe Green Hospital, Preston (360 beds)

SURGICAL REGISTRAR (resident or non-resident)

Busy general surgical unit. F.R.C.S. preferable. Vacant April 1, 1957. Application forms obtainable from Group Secretary, Royal Infirmary, Preston, Lancs. (9885)

MANCHESTER REGIONAL HOSPITAL BOARD

RESIDENT SURGICAL REGISTRAR

required beginning of April for the Royal Infirmary, Blackburn, a busy acute hospital of 262 beds. Post recognized for F.R.C.S. Application forms available from Group Secretary, H.M.C. Office, Royal Infirmary, Blackburn. (9571)

NORTHERN IRELAND HOSPITALS AUTHORITY

APPOINTMENT OF REGISTRAR

Applications are invited for a whole-time post as Registrar in General Surgery at hospitals managed by the Downpatrick Hospital Management Committee. The terms and conditions will be in accordance with the application of the Spens Report to Northern Ireland. Applications to be made on a form obtainable (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, 44-46, Queen Street, Belfast, and to be returned not later than March 16, 1957. (4064)

SHEFFIELD REGIONAL HOSPITAL BOARD

General Hospital, Boston (80 beds)

WHOLE-TIME RESIDENT REGISTRAR (General Surgery and E.N.T.)

required, with relief duties in the Casualty Department. Appointment for one year in first instance. Apply to Secretary, Sheffield Regional Hospital Board, Old Fulwood Road, Sheffield, by March 11, 1957, giving age, nationality, qualifications, present and previous appointments (with dates), naming three referees. (9847)

SOUTH-WEST METROPOLITAN REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of whole-time

SURGICAL REGISTRAR

to the Southampton General Hospital, vacant mid-June. Post will normally be tenable for two years, but subject to review at the end of the first year. Candidates may visit the hospital by arrangement, if they so desire. Forms of application may be obtained from the undersigned, to whom they should be returned not later than March 13, 1957. —Frank Jennings, Group Secretary, Southampton Group Hospital Management Committee, Butlar Street, Southampton. (9963)

THE UNITED SHEFFIELD HOSPITALS

Applications are invited for two appointments as

SURGICAL REGISTRARS

Both posts are vacant on April 15, 1957. The successful candidates will work on a rotation basis between the Royal Infirmary and the Children's Hospital. It is intended, if possible, that the holders of the posts will spend equal periods in the Orthopaedic Department, and on each of two surgical firms at the Royal Infirmary; and for a period at the Children's Hospital. Applications, stating age, qualifications, and experience, with the names of three referees, should be sent not later than March 13, 1957, to the Chief Administrative Officer, The United Sheffield Hospitals, West Street, Sheffield 1. (9996)

WESTERN REGIONAL HOSPITAL BOARD

Applications are invited for the following appointments, which will be for one year in the first instance:

REGISTRAR IN SURGERY

based at the Royal Alexandra Infirmary, Paisley.

REGISTRAR IN SURGERY

based at the Royal Infirmary, Greenock.

Applications (12 copies), stating date of birth, qualifications, experience, present appointment, and the names of three referees, to reach the Secretary, Western Regional Hospital Board, 64, West Regent Street, Glasgow, C.2, by March 16, 1957. (9989)

BATTERSEA GENERAL HOSPITAL Battersea Park, S.W.11

SURGICAL OFFICER

Resident. J.H.M.O. grade. Vacant end of March. Apply Hospital Secretary, enclosing copies of two recent testimonials. (9824)

BRIDGWATER GENERAL HOSPITAL Bridgwater, Somerset (Bridgwater, Minehead and Butleigh Hospital Management Committee)

Applications are invited for the post of

SENIOR HOUSE OFFICER (Surgical)

at the above hospital. The appointment will be for a period of twelve months. Salary at the rate of £745 per annum, less a deduction of £150 per annum in respect of residential emoluments. Applications to the Group Secretary, address as above. (8999)

BRISTOL—COSSHAM FRENCHAY HOSPITAL MANAGEMENT COMMITTEE

SENIOR HOUSE OFFICER

General Surgery, required for duties at Frenchay Hospital and at Cossham Memorial Hospital. Resident appointment, unmarried accommodation only. Post vacant May 25, 1957. Tenable for one year. Recognized under R.C.S. Fellowship regulations. Applications, naming two referees, to the Group Secretary, Frenchay Hospital, Bristol, by March 21, 1957. (4039)

CHAPEL ALLERTON HOSPITAL, Leeds, 7 (255 beds)

SENIOR HOUSE OFFICER (Surgical)

required. National Health Service terms and conditions. Apply Medical Superintendent. (4007)

CHICHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE

Bognor War Memorial Hospital (32 beds)

RESIDENT SENIOR HOUSE OFFICER

required to work under visiting Consultant Surgeon and Physician; also casualty work. Salary £745, less £150 per annum for residence. Modern fully equipped theatre. Good liaison with Chichester main hospitals and with local general practitioners. Also gives opportunity for postgraduate reading. Apply, giving three referees' names, to Group Secretary, 174, Broyle Road, Chichester. (9573)

CLACTON AND DISTRICT HOSPITAL Clacton-on-Sea (58 beds)

Applications invited for post of

SENIOR HOUSE OFFICER (Resident Surgical Officer)

Post tenable for one year. Applications, with copies of three testimonials, to Group Secretary, Colchester H.M.C., 14, Pope's Lane, Colchester, Essex. (9997)

EAST SURREY HOSPITAL Shrewsbury Road, Redhill, Surrey

SENIOR HOUSE OFFICER (Male)

Mainly surgical. Post vacant April. Apply to the Hospital Secretary. (9850)

EPPING, ST. MARGARET'S HOSPITAL

RESIDENT SENIOR HOUSE OFFICER (Surgery)

Vacant March 25, 1957. Post recognized for F.R.C.S. Busy general hospital with easy access to London. Salary on national scale, less deduction for board, lodging, etc. Applications, with copies of two testimonials, to reach the Group Secretary, Epping Group H.M.C., "Oak Cottage," The Plain, Epping, Essex, by March 15, 1957. (9825)

FALMOUTH AND DISTRICT HOSPITAL Falmouth, Cornwall

Applications are invited for the post of

SENIOR HOUSE OFFICER IN GENERAL SURGERY

at the above hospital. Resident post, commencing March 25, 1957. Applications, stating nationality, age, qualifications and experience, together with the names and addresses of two referees, to be sent to the Hospital Secretary, Royal Cornwall Infirmary, Truro. (9574)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

Established 1885

THE Medical Defence Union

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MEMBERSHIP EXCEEDS 43,750

Subscription: £1 each year for first three years for newly qualified entrants, £2 for members of more than three years' standing

(No entrance fee payable by candidates for election within one year of registration with the General Medical Council or the Dental Board.)

Full particulars from the Secretary (Dr. ROBERT FORBES), The Medical Defence Union, Ltd., Tavistock House South, Tavistock Square, London, W.C.1

Surgery—contd.

GLANTAWE HOSPITAL MANAGEMENT COMMITTEE

Swansea Hospital, Swansea

Applications are invited for the resident post of

SENIOR HOUSE OFFICER

in the Surgical Unit of the above hospital. Vacancy April 1, 1957. The post is recognized under the F.R.C.S. (Eng.) regulations. Applications, stating age, qualifications and experience, together with copies of two recent testimonials, should be forwarded to the Hospital Secretary.—T. E. Jones, Group Secretary. (9487)

GULSON HOSPITAL, Coventry (312 beds)

SENIOR HOUSE OFFICER IN GENERAL SURGERY

Recognized F.R.C.S. Applications to Secretary, Group 20 Hospital Management Committee, Coventry and Warwickshire Hospital, Coventry. (9488)

HULL (A) GROUP HOSPITAL MANAGEMENT COMMITTEE

Hull Royal Infirmary (Sutton)

Applications are invited for the post of

HOUSE SURGEON (Grade S.H.O.)

Recognized for F.R.C.S. National salary scale and conditions. Appointment will be for six months, terminable by one month's notice either side. Vacant February. Applications to the Hospital Secretary, Hull Royal Infirmary. (9605)

MONTAGU HOSPITAL, Mexborough, and Annexe (168 beds and 30 beds)

SENIOR HOUSE OFFICER (Surgery)

Residential emoluments £150 per annum. Applications to the Secretary, Hospital Management Committee, "Fern Bank," Doncaster Road, Rotherham. (9507)

NEWMARKET GENERAL HOSPITAL, Suffolk

SENIOR HOUSE SURGEON (S.H.O. grade)

Tenable for six months in first instance. Duties mainly surgical, but a small amount of E.N.T. and Ophthalmic Surgery is included. Preference to candidates who wish to be trained in surgical technique and to gain experience in operative surgery. Applications, with copies of three testimonials, to Medical Superintendent. (9656)

ST. HELENS AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

St. Helens Hospital (196 beds)

RESIDENT HOUSE SURGEON (Senior House Officer grade)

Applications are invited for the above appointment, which becomes vacant from March 1, 1957. Applications, stating age, qualifications and experience, and giving two names for reference, should be forwarded to N. Richards, Group Secretary, Whiston Hospital, Prescot, Lancs. (9967)

UNITED MANCHESTER HOSPITALS

Manchester Royal Infirmary, Manchester, 13

SENIOR HOUSE OFFICER (Surgical)

to commence on May 8, 1957. Whole-time, mainly non-resident training post, tenable for six months, renewable for a second six months. Duties allotted in orthopaedic, surgical out-patients, and general surgical units in rotation. Resident alternate nights for about three months when attached to orthopaedic unit. Application form obtainable from the undersigned, to be returned by March 16, 1957.—G. H. Taylor, Secretary. (9982)

WHITEHAVEN HOSPITAL, Cumberland (119 beds, plus 31 beds in Annexe)

HOUSE SURGEON, WITH ORTHOPAEDIC AND CASUALTY DUTIES
(Recognized pre-registration, S.H.O. grade if appropriate)

Vacant mid-March. Furnished married quarters available. Detailed application, with dates, and names of two referees, to Group Secretary, Workington Infirmary, Cumberland. (9214)

WILSON HOSPITAL, Cranmer Road, Mitcham, Surrey

RESIDENT SENIOR HOUSE SURGEON (not recognized for F.R.C.S.)

Vacant end of March. This post, in small but busy general hospital, provides good and varied experience in diagnosis, treatment and operative procedure. Applications, stating age, qualifications and experience, and the names of referees, to be sent to the Group Secretary, St. Helier Hospital, Carshalton, Surrey. (9849)

WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE

Worthing Hospital, Lyndhurst Road, Worthing, Sussex

Applications are invited from registered medical practitioners for the appointment of

SURGICAL OFFICER
(Senior House Officer grade)

The post is recognized for the revised Fellowship regulations in respect of the six months' training required by candidates for the Final Fellowship examination. Applications, stating age, qualifications, nationality, and experience, together with copies of two recent testimonials, to be forwarded to the Hospital Secretary as soon as possible.—A. V. Oakton, Group Secretary. (9826)

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE

1. Royal Portsmouth Hospital
HOUSE SURGEON

70 beds. Vacant March 1. Pre-registration post.

2. Queen Alexandra Hospital (87 surgical beds)
SENIOR HOUSE SURGEON

Vacant April 1, 1957.

Applications, stating age, experience and qualifications, together with the names of two referees, should be forwarded as soon as possible to E. H. Hurst, St. Mary's Hospital, Milton Road, Portsmouth. (8727)

MILLER GENERAL HOSPITAL (180 beds) Recognized for F.R.C.S. examination

HOUSE SURGEON

Vacant approx. March 22, 1957. Six months' appointment. National salary and conditions. Applications, and testimonials, to Secretary, G and D./H.M.C., St. Alfege's Hospital, S.E.10. (9671)

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, E.15

HOUSE SURGEON (Male or Female)

(House Officer third post). Six months' commencing March 16, 1957. Post recognized for F.R.C.S. Applications, with the names of three referees, to Hospital Secretary by March 9, 1957. (4026)

AMERSHAM GENERAL HOSPITAL

RESIDENT HOUSE SURGEON

required immediately. This appointment in a busy general hospital (including 136 acute beds—six residents) affords excellent experience. Post recognized for F.R.C.S. examinations. Apply, with names of two referees, to Secretary. (9578)

BEDFORD GENERAL HOSPITAL (439 beds)

HOUSE SURGEON

required. Pre- or post-registration, recognized for F.R.C.S. Post offers exceptional opportunities for general experience in busy acute surgical units. Enquiries and applications, with copies of two recent testimonials, to Group Secretary, 3, Kimbolton Road, Bedford. (5752)

BLACK NOTLEY HOSPITAL, Braintree, Essex

Applications invited for post of

HOUSE SURGEON

First, second, third, or pre-registration post. Includes duties in general surgical and gynaecological wards. Recognized for F.R.C.S. Applications, with copies of three testimonials, to Group Secretary, Colchester H.M.C., 14, Pope's Lane, Colchester, Essex. (9998)

EAST RIDING GENERAL HOSPITAL Driffield, Yorkshire (247 beds)

HOUSE SURGEON
(First, second, or third post)

required now. Casualty, general surgery, orthopaedics, and some gynaecology. Approved pre-registration post. Fully registered practitioners may apply. Apply Group Secretary, Westwood Hospital, Beverley, Yorkshire. (9627)

MAIDSTONE WEST KENT GENERAL HOSPITAL (141 beds)

Mid-Kent Hospital Management Committee

Applications are invited for the pre-registration post of

HOUSE SURGEON

Six months' appointment. Post vacant February, 1957. Salary at the rate of £425 to £525 per annum. A deduction at the rate of £125 a year is made for board and lodging and other services provided. Applications should be forwarded, as soon as possible, to the Administrative Officer at the hospital. (7800)

JOYCE GREEN HOSPITAL Dartford (near London). 400 beds. 8 residents

PRE-REGISTRATION or POST-REGISTRATION HOUSE SURGEON (General)

required. Vacant March 1, 1957. Recognized for F.R.C.S. Applications to Hospital Secretary, Joyce Green Hospital, Dartford, Kent. (9851)

MEDWAY AND GRAVESEND HOSPITAL MANAGEMENT COMMITTEE

Gravesend and North Kent Hospital

HOUSE SURGEON

Applications are invited for above resident post, vacant now. The successful applicant will be attached to two Consultant Surgeons, with opportunities for extensive surgery and special experience in vascular work. Recognized for F.R.C.S. and as a pre-registration post. Salary £425 to £525 per annum, according to experience. Applications, stating age, nationality, qualifications and experience, to Hospital Secretary. (9713)

OLDCHURCH HOSPITAL, Romford, Essex (722 beds)

RESIDENT HOUSE SURGEON

required from March 28, 1957, in the General Surgical Unit. Recognized for F.R.C.S. Open to either pre-registration applicants or to fully registered practitioners. This very active unit of a total of approximately 180 beds affords ample opportunities for candidates to obtain first-class tuition and experience. The candidate appointed will be attached to a unit of approximately 60 beds. Applications should be forwarded immediately to the Group Secretary, Romford Group H.M.C., Oldchurch Hospital, Romford. (9810)

ROYAL DEVON and EXETER HOSPITAL, Exeter

Applications are invited from pre-registration and registered medical practitioners for the post of

HOUSE SURGEON (General Surgery)

Vacant April 16, 1957. Applications, with copies of two recent testimonials, to the Hospital Secretary by March 9, 1957. (4078)

SALISBURY GROUP HOSPITAL MANAGEMENT COMMITTEE

Salisbury General Hospital

Applications are invited for the appointment of

RESIDENT HOUSE SURGEON/OBSTETRIC AND GYNAECOLOGICAL HOUSE SURGEON
(recognized by R.C.O.G.)

to run consecutively in this order from May 2, 1957, for a period of six months in each post. The posts are open to pre-registration candidates. Apply, giving names and addresses of two referees, to Group Secretary, Odstock Hospital, Salisbury. (9809)

VICTORIA HOSPITAL, Romford, Essex (99 beds)

RESIDENT HOUSE SURGEON (Male)

required immediately. (Not pre-registration appointment.) Applications should be forwarded to the Secretary, Romford Group H.M.C., Oldchurch Hospital, Romford. (6766)

WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE

Southlands Hospital, Shoreham-by-Sea, Sussex

HOUSE SURGEON

General Surgery and Urology. Pre-registration or registered practitioner. Post vacant March 24, 1957. Recognized by R.C.S. for Fellowship. Applications to Surgeon Superintendent, Southlands Hospital.—A. V. Oakton, Group Secretary. (9853)

WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE

Worthing Hospital, Lyndhurst Road, Worthing (acute general—210 beds)

The undermentioned vacancy will occur on April 1, 1957:

HOUSE SURGEON

Applications from either registered medical practitioners or pre-registration candidates, stating age, qualifications, experience, nationality, and enclosing copies of two recent testimonials, to be forwarded to the Hospital Secretary as soon as possible.—A. V. Oakton, Group Secretary. (9886)

BANGOUR GENERAL HOSPITAL, West Lothian (15 miles from Edinburgh)

Applications are invited for the post of

HOUSE OFFICER

in the General Surgical Unit of Bangour General Hospital. Certain Casualty Duties. Pre-registration post. Salary and conditions of service in accordance with regulations. Applications to Group Secretary and Treasurer, Board of Management, Bangour Hospital, Broxburn, West Lothian. (Pr.4073)

Surgery—contd.

EAST HAM MEMORIAL HOSPITAL
Shrewsbury Road, London, E.7

HOUSE SURGEON

resident, May 2, 1957, for six months (locum from April 18). Pre-registration first post. Recognized for F.R.C.S. Apply, by March 9, 1957, with copies of testimonials, to Hospital Secretary. (Pr.4027)

BECKENHAM HOSPITAL, Kent (100 beds)

HOUSE SURGEON

required. Recognized for F.R.C.S. Pre-registration post. Apply, stating age, nationality, qualifications and experience, and naming three referees, to Administrative Officer. (Pr.4030)

BLACKBURN AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Victoria Hospital, Accrington (114 beds)

HOUSE SURGEON

required immediately. Post recognized for F.R.C.S. and approved for pre-registration purposes. Applications to Group Secretary, H.M.C. Office, Royal Infirmary, Blackburn, Lancs. (Pr.9534)

BOARD OF MANAGEMENT FOR STIRLING AND CLACKMANNAN HOSPITALS

RESIDENT HOUSE SURGEON
(pre-registration)

at Clackmannan County Hospital, wanted immediately. Applications should be sent to the Group Medical Superintendent, Royal Infirmary, Stirling. (Pr.9954)

CAERPHILLY AND DISTRICT HOSPITAL
(226 acute general beds), near Cardiff

HOUSE SURGEONS (Two appointments)

now vacant. Preference given to pre-registration candidates. The posts are recognized by the Royal College of Surgeons. Six miles from the teaching hospital at Cardiff. Apply to Group Secretary, address as above. (Pr.9746)

XIII CHESTER AND DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Chester Royal Infirmary

Applications are invited for the post of
HOUSE SURGEON (General)
Recognized for F.R.C.S. and pre-registration service. Applications, giving details, together with the names and addresses of two referees, should be forwarded to the Hospital Secretary. (Pr 9676)

CITY GENERAL HOSPITAL, Stoke-on-Trent

HOUSE OFFICER—GENERAL SURGERY

required. Pre-registration post. Hospital recognized for F.R.C.S. Detailed applications, with copy testimonials, to Group Secretary, H.M.C., Princes Road, Stoke-on-Trent. (Pr.9854)

DARLINGTON MEMORIAL HOSPITAL
(208 beds)

Applications are invited for the post of
RESIDENT HOUSE SURGEON
(approved pre-registration appointment)
which post is recognized for the F.R.C.S.(Eng). Salary in accordance with national scale. Apply, giving age and references, to the undersigned forthwith.—G. W. Beckwith, Group Secretary. (Pr.9677)

DUDLEY, STOURBRIDGE AND DISTRICT HOSPITAL GROUP

The Guest Hospital, Dudley (154 beds)

HOUSE OFFICER, SURGICAL (Pre-registration)

Post vacant immediately. Apply Group Secretary, The Guest Hospital, Dudley, Worcs. (Pr.5786)

GENERAL HOSPITAL, Sunderland

HOUSE SURGEON

required. Post recognized for pre-registration experience and for the F.R.C.S. examination. Vacant March 6, 1957. Apply, naming two referees, to the Hospital Secretary, General Hospital, Chester Road, Sunderland. (Pr.9942)

EASTBOURNE, ST. MARY'S HOSPITAL
(261 beds)

Applications are invited for the pre-registration post of
HOUSE SURGEON
for general surgery in a busy, well-equipped hospital. Staff of six House Officers. Post recognized by Royal College of Surgeons. Applications, stating age, nationality, qualifications and experience, with copies of two recent testimonials, to the Group Secretary, 29, Bedfordwell Road, Eastbourne. (Pr.9855)

GEORGE ELIOT HOSPITAL, Nuneaton

HOUSE OFFICER IN GENERAL SURGERY

Recognized pre-registration and F.R.C.S. Applications to Hospital Secretary, George Eliot Hospital, Nuneaton. (Pr.9489)

HASTINGS, ROYAL EAST SUSSEX HOSPITAL
(150 beds)

HOUSE SURGEON

required. Pre-registration post, vacant March 11, 1957. Apply, with testimonials, to Hospital Administrator as soon as possible. (Pr.9856)

HOSPITAL OF ST. CROSS, Rugby

HOUSE OFFICER IN GENERAL SURGERY

Recognized pre-registration and F.R.C.S. Applications to Hospital Secretary, Hospital of St Cross, Rugby. (Pr.9490)

HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE

Huddersfield Royal Infirmary (285 beds)

HOUSE SURGEON

required, commencing duties immediately. The post is recognized as a pre-registration appointment and for the F.R.C.S. Salary in accordance with national scale. Applications, together with copies of three recent testimonials, to be addressed to the undersigned as soon as possible.—H. J. Johnson, Secretary to the Management Committee, the Royal Infirmary, Huddersfield. (Pr.4038)

KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL (112 beds)

Applications are invited for the pre-registration post of
HOUSE SURGEON
at the above hospital. Post vacant shortly. Applications, with the names of three referees, to the Hospital Secretary. (Pr.9811)

LEICESTER ROYAL INFIRMARY

Applications are invited for the post of
HOUSE SURGEON
available for pre-registration candidates, vacant April 1. Recognized for F.R.C.S. Applications, stating age and qualifications, together with copies of recent testimonials, to the Group Secretary, Leicester No. 1 Hospital Management Committee, the Leicester Royal Infirmary, immediately. (Pr.9857)

MAELOR GENERAL HOSPITAL, Wrexham
(591 beds)

Applications are invited for the post of
HOUSE SURGEON
at the above hospital, to commence duties as soon as possible. The appointment is recognized for the Diploma of F.R.C.S. (Eng. and Edin.), and is a pre-registration post. Applications, stating age, nationality, qualifications and experience, with copies of two recent testimonials, to be sent to the Group Secretary, Maelor General Hospital, Wrexham, as soon as possible. (Pr.9858)

NOBLE'S ISLE OF MAN HOSPITAL (160 beds)

Applications are invited for the post of
HOUSE SURGEON
The post is recognized for pre-registration purposes and becomes vacant in mid-March, 1957. Four residents on staff. Salary £425/£475 according to experience. Applications, enclosing copies of two recent testimonials, to the Secretary, Noble's Hospital, Douglas, Isle of Man. (Pr.9355)

NORTHAMPTON GENERAL HOSPITAL
(482 beds)

Vacancy April 1 for
TWO HOUSE OFFICERS, General Surgery
Recognized for F.R.C.S. and for pre-registration. Six months' appointment in first instance. Applications, as soon as possible, to S. G. Hill, Superintendent. (Pr.9303)

NORTH DEVON INFIRMARY, Barnstaple
(105 beds)

HOUSE SURGEON

required. Recognized pre-registration appointment: the post can be taken up immediately. Applications to Group Secretary, North Devon H.M.C., 19, Alexandra Road, Barnstaple. (Pr.5887)

ROYAL ALEXANDRA INFIRMARY, Paisley

HOUSE SURGEON (Pre-registration)

required immediately for General Surgery. Applications to Group Medical Superintendent. (Pr.9705)

ROYAL SOUTH HANTS HOSPITAL (278 beds)

RESIDENT HOUSE SURGEON

required. Pre-registration candidates eligible. Applications, with copies of recent testimonials, should be forwarded to Group Secretary, Southampton Group Hospital Management Committee, Bullar Street, Southampton. (Pr.9665)

PONTYPOOL AND DISTRICT HOSPITAL
Pontypool, Mon (126 beds)
(Recognized F.R.C.S. and Provisional Registration)

HOUSE SURGEON

required, covering 34 surgical and 7 gynaecological beds. Resident staff are a J.H.M.O. (surgical), another House Surgeon, a House Physician, and this post. Write, quoting two referees, to T. A. Jones, Group Secretary, 64, Cardiff Road, Newport, Mon. (Pr.9852)

ROYAL HAMPSHIRE COUNTY HOSPITAL
Winchester (315 beds)

HOUSE SURGEON
(post recognized by Royal College of Surgeons)
required for general surgery with some E.N.T. duties. Approved pre-registration post. Vacant immediately. Applications, with copies of two testimonials, to the Group Secretary. (Pr.4001)

ROYAL SUSSEX COUNTY HOSPITAL
Brighton (312 beds)

HOUSE SURGEON

required immediately. Recognized for pre-registration and F.R.C.S. Applications, stating usual particulars, and naming two referees, to the Administrative Officer. (Pr.9114)

SHREWSBURY HOSPITAL GROUP

Royal Salop Infirmary/Copthorne Hospital
(500 beds)

HOUSE SURGEON

Vacant March 1, 1957. Pre-registration candidates eligible. Recognized for the F.R.C.S. Applications, with copy testimonials, to Group Secretary, Royal Salop Infirmary, Shrewsbury. (Pr.9535)

SOUTH CHESHIRE HOSPITAL MANAGEMENT COMMITTEE

Crewe and District Memorial Hospital
(108 beds acute, and continuation 32 beds)

PRE-REGISTRATION HOUSE OFFICER
(Surgical)

required. (Approved for F.R.C.S.) Salary and conditions in accordance with Whitley Council Scale. Apply immediately, stating age, qualifications, etc., with names of two referees, to the Group Secretary, Barony Hospital, Nantwich, Cheshire. (Pr.4065)

SOUTH-WEST DURHAM HOSPITAL MANAGEMENT COMMITTEE

The General Hospital, Bishop Auckland, Co. Durham (350 beds)

HOUSE SURGEON

required. Recognized pre-registration post. Apply, naming two referees, to K. G. T. Luxford, Group Secretary, at the above address. (Pr.9658)

STAINES GROUP HOSPITAL MANAGEMENT COMMITTEE

Ashford Hospital, Ashford, Middlesex (560 beds)

RESIDENT HOUSE SURGEONS (Male)

required for general surgical duties. Six months' appointments, vacant (1) March 5, and (2) April 1, 1957. Preference given to Pre-registration candidates. Applications, stating age, qualifications, and experience, with copies of up to three recent testimonials, to Medical Director of Hospital. (Pr.4011)

SURBITON GENERAL HOSPITAL
Ewell Road, Surbiton

RESIDENT JUNIOR HOUSE OFFICER
(Surgical)

This post is recognized for pre-registration purposes. Duties include casualty out-patients. Post provides interesting experience in surgery and medicine under visiting consultants. Salary and conditions of service in accordance with national scales. Applications, stating age, qualifications, and nationality, with copies of two testimonials, to the Administrative Officer. (Pr.9828)

TAUNTON AND SOMERSET HOSPITAL

Applications are invited for
HOUSE OFFICER (General Surgery)
Post vacant now. Recognized for pre-registration candidates and F.R.C.S. Applications, stating age, nationality, and qualifications, together with the names of two referees, should be forwarded to the Group Secretary, Taunton Hospital Management Committee, Musgrove Park Hospital, Taunton, Somerset. (Pr.9887)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

Surgery—contd.

STOCKPORT AND BUXTON HOSPITAL MANAGEMENT COMMITTEE

Stockport Infirmary (163 beds)

Applications are invited for the post of
HOUSE OFFICER
(General Surgery and Ophthalmology)
Vacant March 9, 1957. This post is approved for pre-registration purposes and recognized for the F.R.C.S. and D.O.M.S. Applications, stating age, qualifications and experience, together with copies of two testimonials, to be addressed to the Secretary, Stockport and Buxton H.M.C., 59B, Shaw Heath, Stockport. (Pr.9956)

THE GENERAL HOSPITAL, Burton upon Trent

PRE-REGISTRATION HOUSE OFFICER
(General Surgery)
required at the above hospital, which is recognized for the F.R.C.S. Applications to Group Secretary as soon as possible. (Pr.9953)

TREDEGAR, MONMOUTHSHIRE, GENERAL HOSPITAL (20 miles from Newport and 24 from teaching hospital at Cardiff; six miles from Vale of Usk)

Applications are invited for post of
HOUSE SURGEON
Preference given to pre-registration candidates. Surgical unit of 50 beds and six orthopaedic beds under daily supervision of Consultant Surgeon and visiting supervision of Orthopaedic Surgeon. Busy out-patient, casualty and radiological departments. Married quarters. Apply to Group Secretary, address as above. (Pr.9747)

WEST HERTS HOSPITAL
Hemel Hempstead, Herts

HOUSE SURGEON (pre-registration)
required. Applications, giving full details and copies of recent testimonials, should be sent to the Hospital Secretary at once. (Pr.9955)

THORACIC SURGERY

WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE

Tehidy Chest Hospital, Camborne, Cornwall (150 beds, 30 being surgical)

Applications are invited for the office of
JUNIOR HOSPITAL MEDICAL OFFICER
for modern Thoracic Surgical Unit. The appointment offers good practical experience in a wide range of thoracic surgery and all aspects of pulmonary tuberculosis. Applications, stating age, qualifications, and previous appointments, together with copies of two recent testimonials, should reach the undersigned as soon as possible.—David H. Preston, Group Secretary, 4, St. Clement Vean, Truro. (9269)

BROMPTON HOSPITAL, S.W.3

Applications invited for the post of
RESIDENT SURGICAL OFFICER
(Post graded as Senior House Officer or Registrar, according to qualifications and experience)
for six months from May 1, 1957, with eligibility for re-appointment. Candidates must have held a resident hospital appointment. Applications, stating age, qualifications (with dates), nationality, and appointments held, together with copies of testimonials, by March 9, 1957, to Kenneth A. F. Miles, House Governor. (9618)

LONDON CHEST HOSPITAL

Hospitals for Diseases of the Chest

A vacancy occurs May 1 for
RESIDENT SURGICAL OFFICER
Appointment for six months, with prospect of renewal. Post graded as Senior House Officer or Registrar, according to qualifications and previous surgical experience. Applications, stating date of birth, qualifications (with dates), and previous appointments held, with copies of three testimonials, should reach the undersigned not later than March 19.—Thomas Brown, House Governor, London Chest Hospital, E.2. (9934)

BROADGREEN HOSPITAL, Liverpool, 14

Applications are invited for the appointment of
HOUSE SURGEON or
SENIOR HOUSE OFFICER (Resident)
in the Thoracic Surgical Unit for six months from March 1, 1957. The appointment is recognized for pre-registration purposes and the grading will be according to the experience of the applicant appointed. Salary: House Surgeon, £425/£475/£525, less £125 per annum resident charges. Senior House Officer, £745 per annum, less £150 per annum. Application forms, obtainable from the undersigned, to be returned completed as soon as possible.—H. Blythe, Group Secretary. (4036)

UROLOGY

LEEDS REGIONAL HOSPITAL BOARD

REGISTRAR IN UROLOGY
for duties at the Bradford Royal Infirmary (65 urology beds). Approximately one-fifth of the duties will be general surgical. Non-resident. Post vacant end of June. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 14, 1957. (9888)

THE UNITED CARDIFF HOSPITALS and THE WELSH REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of
REGISTRAR IN UROLOGY
The appointment is a joint one between the United Cardiff Hospitals and the Welsh Regional Hospital Board, the time divided equally between the two Boards. Application forms are available from the Secretary to the Board of Governors, United Cardiff Hospitals, Cardiff Royal Infirmary, Cardiff, and should be returned within 14 days of the appearance of this advertisement. (4066)

VENEREOLOGY

THE UNITED LIVERPOOL HOSPITALS

Applications are invited for appointment as
SENIOR HOSPITAL MEDICAL OFFICER
(female) in Venereology
to take up duty on July 1, 1957. The appointment is for four notional half-days a week. Apply, by March 23, 1957, giving full particulars of age, qualifications, experience, etc., and details of present and previous appointments, together with the names of three persons to whom reference may be made, to the Secretary, 80, Rodney Street, Liverpool, 1. (4059)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

PUBLIC HEALTH

CITY OF NOTTINGHAM
Health Services

APPOINTMENT OF MEDICAL LOCUM TENENS
Applications are invited from medical practitioners with experience of Maternal and Child Health for a Locum Tenens appointment from May to September, 1957. Salary will be at the rate of £1,050 per annum. Applications, accompanied by the names of two persons to whom reference may be made, should be sent to the Medical Officer of Health, Huntingdon Street, Nottingham, not later than March 15, 1957.—T. J. Owen, Town Clerk, Guildhall, Nottingham. (9813)

CITY OF STOKE-ON-TRENT

SENIOR MEDICAL OFFICER
(Maternal and Child Welfare)
Applications are invited for the above appointment from registered medical practitioners (women) holding a Diploma in Public Health and having had extensive experience in maternal and child welfare and general public health work. The salary will be on the Whitley Council scale, £1,520 by £50 by £55 (7) to £1,955. The person appointed will be responsible, under the direction of the Medical Officer of Health, for carrying out the administrative duties of the Maternal and Child Welfare Section of the Public Health Department and any such duties as the Medical Officer of Health may from time to time determine. The appointment will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1947, and the successful candidate will be required to pass a medical examination. Applications (no forms), in envelopes endorsed "Senior Medical Officer (Maternal and Child Welfare)," together with copies of three recent testimonials, or names of three referees, to be delivered to the Medical Officer of Health, Public Health Department, St. Peter's Chambers, Glebe Street, Stoke-on-Trent, not later than March 16, 1957.—Harry Taylor, Town Clerk. (9812)

LONDON COUNTY COUNCIL

VISITING MEDICAL OFFICER
Applications are invited from medical practitioners practising under National Health Service for appointment as visiting medical officer to a residential nursery at 30, Abercorn Place, N.W.8, which accommodates 15 short-stay children between 9 months and 5 years of age. Remuneration £70 a year, plus fees receivable from Executive Council in respect of children and staff who may be taken on N.H.S. list. Particulars and application form from the Medical Officer of Health (PH/D.1/257), County Hall, Westminster Bridge, S.E.1, and returnable by March 11. (4006)

LONDON COUNTY COUNCIL

VISITING MEDICAL OFFICER
Applications are invited from medical practitioners practising under National Health Service for appointment as visiting medical officer to a residential establishment at 94, Oakley Street, Chelsea, S.W.3, which accommodates 12 young children, mostly short-stay cases. Remuneration £70 a year, plus fees receivable from Executive Council in respect of children and staff who may be taken on N.H.S. list. Particulars and application form from the Medical Officer of Health (PH/D.1/324), County Hall, Westminster Bridge, S.E.1, and returnable by March 11. (4072)

WORCESTERSHIRE COUNTY COUNCIL

ASSISTANT COUNTY MEDICAL OFFICER
Applications invited from registered medical practitioners (men or women) for this appointment. The duties will chiefly concern School Health and Child Welfare Services. D.C.H. or D.P.H. an advantage. Salary, travelling and subsistence allowances on national scale. Additional £200 per annum paid for occasional duties during the absence of the Medical Officer of Health for Halesowen and Stourbridge Boroughs and Medical Superintendent of the Hayley Green Isolation Hospital. Application forms from County Medical Officer, County Buildings, Worcester. (S.18) (9957)

GOVERNMENTAL

TREASURY MEDICAL SERVICE

Applications are invited from medical practitioners, practising in the districts detailed below, for appointment, in a part-time and mainly advisory capacity, as

LOCAL TREASURY MEDICAL OFFICER

for each of the places or groups of places shown. The town shown in brackets after the place-names indicates the Head Post Office Area in which the place, or group of places, is situated. Successful applicants will be required to examine and report on the condition of certain Government Officers, teachers, candidates for appointment, etc., who may be referred to them from time to time; and to attend when summoned to an emergency case of accident or sudden illness occurring in a Government office in the neighbourhood. Fees for this work, and mileage allowance where necessary, will be paid on a scale agreed with the British Medical Association. Intending applicants should write, within 14 days, to Treasury Medical Adviser, Treasury Chambers, Whitehall, S.W.1, for a form on which application may be made. Applicants should be not more than 60 years of age. The places for which applications are invited are as follows:

England and Wales

Erdington (Birmingham, 23).
Corfe Castle (Bournemouth).
Croydon, East (Croydon).
Kenninghall (Norwich).
Nottingham, N.W. (Nottingham).
Willington Quay and Percy Main (Newcastle on Tyne).

Northern Ireland

Downpatrick (Downpatrick).

SERVICES

THE MEDICAL SERVICE OF THE ROYAL NAVY

VACANCIES FOR MEDICAL OFFICERS

Candidates are invited for Short Service Commissions of three years, on termination of which a gratuity of £600 (tax free) is payable. Ample opportunity is granted for transfer to Permanent Commissions on completion of one year's total service. Officers so transferred are paid instead a grant of £1,500 (taxable). All entrants are required to be British subjects, whose parents are British subjects, medically qualified, physically fit, and to pass an interview. Full particulars from: The Admiralty Medical Department, Queen Anne's Mansions, St. James's Park, London, S.W.1.

REPUBLIC OF IRELAND

OUR LADY'S HOSPITAL FOR SICK CHILDREN
Crumlin, Dublin

Applications are invited for the following posts:

DERMATOLOGIST (part-time)
PSYCHIATRIST (part-time)

Basis of remuneration to be such as may from time to time be sanctioned by the Minister for Health. Application forms may be obtained from the undersigned. Latest date for receipt of applications, March 23, 1957.—Kyran P. Tanham, Secretary/Manager. (9958)

Republic of Ireland—contd.

GALWAY COUNTY COUNCIL

VACANCIES ON RESIDENT MEDICAL STAFF
Galway Regional Hospital

Application forms and full particulars of the following whole-time, temporary posts may be obtained from the Secretary, Galway County Council, County Buildings, Galway, to whom completed forms should be returned so as to reach him on or before March 12, 1957:

ONE MEDICAL REGISTRAR
(to Professor of Medicine)

Salary at the rate of £800 per annum plus temporary bonus of £62 10s. per annum.

ONE SENIOR HOUSE PHYSICIAN

Salary at the rate of £600 per annum plus temporary bonus of £49 10s. per annum.

ONE HOUSE PHYSICIAN (General)

Salary at the rate of £450 per annum plus temporary bonus of £39 15s. per annum.

A deduction at the rate of £159 per annum will be made for emoluments provided in kind.—L. O'Luanaigh, Secretary. (9895)

OVERSEA (Vacant)

APPLICATIONS ARE INVITED FROM QUALIFIED OPHTHALMOLOGISTS for position in 20-member group practice in prosperous southern Alberta town. New hospital and fully equipped modern ophthalmic department available. Full partnership for suitable applicant after about two years. Initial salary from $8,400.00 (£3,000) yearly according to experience. Further details on request. Applications are invited, stating full personal and professional details, together with names of two references, to Box 3894, B.M.J.

ASSISTANTSHIP POSITION OFFERED WITH highly qualified general practitioner, Toowoomba, Queensland. Salary £2,500 per annum, plus car expenses. Applicant must hold degree of either F.R.C.S. or M.R.C.P., ultimate objective third share in specialist clinic partnership to be established. Toowoomba offers ideal climate, high schools, and hospital facilities; every assistance rendered for accommodation and transport. Apply, with details of experience, references, and personal photograph, David W. Reid, Medical Agent, Wickham Terrace, Brisbane, Queensland.

DEATH VACANCY FOR SALE. GENERAL Practice, one surviving partner, pleasant and safe country district Kenya Colony.—Box 338, B.M.J.

AUSTRALIA (N.S.W.). OPHTHALMIC ASSISTANTSHIP OFFERED. £3,000 per annum. View early partnership. Particulars, including age, whether British born, number in family, previous appointments, and practical experience in surgery.—Box 241, B.M.J.

OPPORTUNITY AVAILABLE FOR ENERGETIC General Practitioner to join partnership in Hobart, Tasmania. Write in first instance, giving full particulars, Medical School, experience, age, marital status, religion, etc., to Box 337, B.M.J.

IMMEDIATE VACANCY IN FOUR-DOCTOR General Hospital, Newfoundland. Duties combine in-patient care and general practice work offering wide scope and experience in any clinical field. This unit serves twelve thousand population and includes service of Major Surgery for wider area. Salary $6,000 yearly. Furnished apartment, board free, single air passage paid. Address replies Box 336, B.M.J.

SOCIAL AND PREVENTIVE MEDICINE. PROFESSOR required to organize and head department. Excellent opportunity to collaborate in public health development of Saskatchewan. Records of universal hospitalization plan provide valuable research material. This medical school is committed to the study of medical care problems of Saskatchewan. Salary £10,000, with additional income depending on qualifications and experience. Address: Dean of Medicine, University of Saskatchewan, Saskatoon, Canada. (9959)

CATHOLIC MISSION HOSPITALS. VACANcies in East and West Africa and India.—Apply Secretary, Damien Society, 47, Fitzwilliam Square, Dublin. (7130)

A VACANCY EXISTS FOR A DIAGNOSTIC RADIOLOGIST in this 800-bed active General Hospital. Starting salary $10,000 to $12,000 yearly, depending on experience and qualifications, etc. Reply to Director, Department of Radiology, Regina General Hospital, Regina, Saskatchewan, Canada. (9707)

BASUTOLAND PROTECTORATE

MEDICAL OFFICERS

with qualifications registrable in United Kingdom required for sole charge of hospital in districts where at present only one medical officer is stationed. District hospitals are of cottage hospital type and each includes an out-patient department. Duties include weekly visits to local gaol, and medico-legal post-mortem examinations. Appointment on two years' probation to the pensionable establishment. Salary £940 to £1,515 a year, starting point determined by age and experience. Following also payable: (a) cost of living allowance of 12% of salary up to a maximum of £132 a year for married officers and half this rate for single officers. (b) Education allowance of £50 for each child (up to three under the age of 18) for education outside territory. Free passages for officer, wife and up to three children. Local leave permitted and generous home leave granted after each tour of 24 to 30 months. Income tax at local rates, which are low. Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD 117/76/01). (9936)

COMMONWEALTH OF AUSTRALIA DEPARTMENT OF HEALTH

Vacancies exist in the Commonwealth Department of Health for the following positions:

Medical Officers—Northern Territory
Salary: £2,407–2,737.
Duties: Clinical.
Accommodation available for rental.

Medical Officers—General Division Located Capital Cities of Australia

Salary: £1,857–2,517.
Duties: Quarantine and General Governmental work.
Accommodation not provided.

All salary rates quoted are in Australian currency with commencing salary according to experience.

Further information and application forms may be obtained from:

The Chief Commonwealth Medical Officer,
Australia House,
London, W.C.2.

HER MAJESTY'S OVERSEAS CIVIL SERVICE
Somaliland Protectorate

MALE MEDICAL OFFICER

required for general medical duties, including simple surgery and, if necessary, training of dressers.

LADY MEDICAL OFFICER (Single)

required for general medical duties, with special reference to diseases of women and children. Should be prepared to run maternity and child welfare clinics and assist in training of Somali staff.

Candidates must possess qualifications registrable in United Kingdom. Salary scale from £1,116 to £1,836 a year, plus temporary (non-pensionable) cost-of-living allowance of 10% of salary, subject to maximum of £162 a year. Commencing salary determined by qualifications and experience. Pension earned at rate of 1/600th of final pensionable emoluments for each completed month of service. Furnished quarters provided at low rental. Free passages in both directions for officer, wife and up to four children under 18 years. No income tax. Tour of service 15 to 21 months, after which generous home leave granted. Local leave also granted. Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD.117/5/01). (4047)

GOVERNMENT OF THE FEDERATION OF NIGERIA

SENIOR PATHOLOGIST

required to direct fully equipped Forensic Science Laboratory with a department of photography and to conduct medico-legal autopsies and examinations. Other duties include blood grouping, toxicology, training of junior technical staff and advisory duties to the Attorney-General, the Nigeria Police, and the Chief Medical Advisor. Candidates must possess medical degree registrable in United Kingdom, a higher qualification (e.g., D.C.P. or Dip. Bact.), experience in forensic medicine, and, if possible, also in forensic science generally, and ten years' experience after original registrable qualification (including at least three years in general pathology—including morbid anatomy, histopathology, biochemistry, and haematology with blood grouping techniques—but not necessarily bacteriology). If candidate has less than ten years' experience, appointment as Special Grade Medical Officer (Pathology) can be made. Appointment may be: (a) on 3 years' probation for permanent and pensionable employment. Pension (non-contributory) at rate of 1/600th of final pensionable emoluments for each completed month of reckonable service. (b) From National Health Service, candidate retaining superannuation rights up to six years and receiving gratuity (taxable) of 20% of aggregate of salary. Salary under (a) or (b) is £2,220 a year, or on scale from £1,326 to £1,950 for a Special Grade Medical Officer (Pathology). (c) On short-term contract (2 tours of 18-24 months) with salary of £2,664 a year, or from £1,536 to £2,286 for Special Grade Medical Officer. On completion of contract a gratuity (taxable) is paid at rate of £37 10s. for each completed period of 3 months' service, including leave. Officer appointed under (a) or (c) is required to contribute to a Widows' and Orphans' Pension Scheme. Quarters at low rental. Free return passages for officer and wife. Return passages for children, to age eighteen, provided this does not exceed cost of two adult return passages in any one tour of service. Children's (Separate Domicile) allowance of £75 a year for each child under eighteen, ceasing if children join parents in Nigeria. Income tax at low local rates. Local leave permissible and generous home leave after each tour. Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD 117/14/051). (4021)

GOVERNMENT OF THE FEDERATION OF RHODESIA AND NYASALAND
Ministry of Health

VACANCIES: GOVERNMENT MEDICAL OFFICERS (Male)

As a result of continued expansion in the Medical Services of the Federation further vacancies exist for Government Medical Officers. These are essentially general duty posts and applicants must have completed one year's experience since qualifying. Minimum commencing emoluments, including allowances in lieu of private practice, vary between £1,450 and £1,650 p.a., according to experience. The maximum basic salary on this grade is £1,850, but opportunities exist for transfer to centres with private practice benefits or promotion to higher grades. Application forms and further details from the Secretary (R), Rhodesia House, 429, Strand, London, W.C.2. Closing date March 30. (4024)

HOSPITAL OF ST. RAPHAEL
Chapel Street, New Haven, Connecticut

Three-year approved

SURGICAL RESIDENCY

available in a 375-bed general hospital situated between New York City and Boston. Minimum stipend is $150.00 per month, plus complete maintenance. An apartment allowance of $80.00 per month is given in addition if married. For information write to Orlando Pellecia, M.D., Chief of Surgery. (4074)

INSTITUTE OF MEDICAL AND VETERINARY SCIENCE, South Australia

ASSISTANT CLINICAL PATHOLOGIST

Applications from medical graduates with some experience in Clinical Pathology are invited. The Institute provides facilities for all branches of laboratory medicine, but the present vacancy is for an officer wishing to specialize in advanced haematology and devote part of his time to research. The appointment will be for three years in the first instance, but is renewable or may be made permanent. There will be opportunities for promotion to more senior appointments in due course. The salary is in the range of £A.1,776 to £A.2,176, according to experience. A free passage for the officer and his family is provided. Enquiries and applications should be sent by air mail to the Director: P.O. Box 14, Rundle Street, Adelaide, South Australia. (9318)

OPPORTUNITY FOR PSYCHIATRIC RESIdency training for a limited number of Physicians starting immediately, or July, 1957. Accredited for two years' training. Salary range $400-$450-$500 a month. For further information contact Jack A. Wolford, M.D., Superintendent, Hastings State Hospital, Lakeside, Nebraska.

Surgery—contd.

STOCKPORT AND BUXTON HOSPITAL MANAGEMENT COMMITTEE

Stockport Infirmary (163 beds)

Applications are invited for the post of
HOUSE OFFICER
(General Surgery and Ophthalmology)
Vacant March 9, 1957. This post is approved for pre-registration purposes and recognized for the F.R.C.S. and D.O.M.S. Applications, stating age, qualifications and experience, together with copies of two testimonials, to be addressed to the Secretary, Stockport and Buxton H.M.C., 59B, Shaw Heath, Stockport. (Pr.9956)

THE GENERAL HOSPITAL, Burton upon Trent

PRE-REGISTRATION HOUSE OFFICER
(General Surgery)
required at the above hospital, which is recognized for the F.R.C.S. Applications to Group Secretary as soon as possible. (Pr.9953)

TREDEGAR, MONMOUTHSHIRE, GENERAL HOSPITAL (20 miles from Newport and 24 from teaching hospital at Cardiff; six miles from Vale of Usk)

Applications are invited for post of
HOUSE SURGEON
Preference given to pre-registration candidates. Surgical unit of 50 beds and six orthopaedic beds under daily supervision of Consultant Surgeon and visiting supervision of Orthopaedic Surgeon. Busy out-patient, casualty and radiological departments. Married quarters. Apply to Group Secretary, address as above. (Pr.9747)

WEST HERTS HOSPITAL
Hemel Hempstead, Herts

HOUSE SURGEON (pre-registration)
required. Applications, giving full details and copies of recent testimonials, should be sent to the Hospital Secretary at once. (Pr.9955)

THORACIC SURGERY

WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE

Tehidy Chest Hospital, Camborne, Cornwall (150 beds, 30 being surgical)

Applications are invited for the office of
JUNIOR HOSPITAL MEDICAL OFFICER
for modern Thoracic Surgical Unit. The appointment offers good practical experience in a wide range of thoracic surgery and all aspects of pulmonary tuberculosis. Applications, stating age, qualifications, and previous appointments, together with copies of two recent testimonials, should reach the undersigned as soon as possible.—David H. Preston, Group Secretary, 4, St. Clement Vean, Truro. (9269)

BROMPTON HOSPITAL, S.W.3

Applications invited for the post of
RESIDENT SURGICAL OFFICER
(Post graded as Senior House Officer or Registrar, according to qualifications and experience)
for six months from May 1, 1957, with eligibility for re-appointment. Candidates must have held a resident hospital appointment. Applications, stating age, qualifications (with dates), nationality, and appointments held, together with copies of testimonials, by March 9, 1957, to Kenneth A. F. Miles, House Governor. (9618)

LONDON CHEST HOSPITAL

Hospitals for Diseases of the Chest

A vacancy occurs May 1 for
RESIDENT SURGICAL OFFICER
Appointment for six months, with prospect of renewal. Post graded as Senior House Officer or Registrar, according to qualifications and previous surgical experience. Applications, stating date of birth, qualifications (with dates), and previous appointments held, with copies of three testimonials, should reach the undersigned not later than March 19.—Thomas Brown, House Governor, London Chest Hospital, E.2. (9934)

BROADGREEN HOSPITAL, Liverpool, 14

Applications are invited for the appointment of
HOUSE SURGEON or
SENIOR HOUSE OFFICER (Resident)
in the Thoracic Surgical Unit for six months from March 1, 1957. The appointment is recognized for pre-registration purposes and the grading will be according to the experience of the applicant appointed. Salary: House Surgeon, £425/£475/£525, less £125 per annum resident charges. Senior House Officer, £745 per annum, less £150 per annum. Application forms, obtainable from the undersigned, to be returned completed as soon as possible.—H. Blythe, Group Secretary. (4036)

UROLOGY

LEEDS REGIONAL HOSPITAL BOARD

REGISTRAR IN UROLOGY
for duties at the Bradford Royal Infirmary (65 urology beds). Approximately one-fifth of the duties will be general surgical. Non-resident. Post vacant end of June. Applications, stating age, qualifications, and details of present and previous appointments (with dates), together with the names and addresses of three referees, to the Secretary, Joint Registrars Committee, Park Parade, Harrogate, by March 14, 1957. (9888)

THE UNITED CARDIFF HOSPITALS and THE WELSH REGIONAL HOSPITAL BOARD

Applications are invited for the appointment of
REGISTRAR IN UROLOGY
The appointment is a joint one between the United Cardiff Hospitals and the Welsh Regional Hospital Board, the time divided equally between the two Boards. Application forms are available from the Secretary to the Board of Governors, United Cardiff Hospitals, Cardiff Royal Infirmary, Cardiff, and should be returned within 14 days of the appearance of this advertisement. (4066)

VENEREOLOGY

THE UNITED LIVERPOOL HOSPITALS

Applications are invited for appointment as
SENIOR HOSPITAL MEDICAL OFFICER
(female) in Venereology
to take up duty on July 1, 1957. The appointment is for four notional half-days a week. Apply, by March 23, 1957, giving full particulars of age, qualifications, experience, etc., and details of present and previous appointments, together with the names of three persons to whom reference may be made, to the Secretary, 80, Rodney Street, Liverpool, 1. (4059)

IMPORTANT: All intending applicants should read the revised NOTICE at the top of page 24

PUBLIC HEALTH

CITY OF NOTTINGHAM
Health Services

APPOINTMENT OF MEDICAL LOCUM TENENS
Applications are invited from medical practitioners with experience of Maternal and Child Health for a Locum Tenens appointment from May to September, 1957. Salary will be at the rate of £1,050 per annum. Applications, accompanied by the names of two persons to whom reference may be made, should be sent to the Medical Officer of Health, Huntingdon Street, Nottingham, not later than March 15, 1957.—T. J. Owen, Town Clerk, Guildhall, Nottingham. (9813)

CITY OF STOKE-ON-TRENT

SENIOR MEDICAL OFFICER
(Maternal and Child Welfare)
Applications are invited for the above appointment from registered medical practitioners (women) holding a Diploma in Public Health and having had extensive experience in maternal and child welfare and general public health work. The salary will be on the Whitley Council scale, £1,520 by £50 by £55 (7) to £1,955. The person appointed will be responsible, under the direction of the Medical Officer of Health, for carrying out the administrative duties of the Maternal and Child Welfare Section of the Public Health Department and any such duties as the Medical Officer of Health may from time to time determine. The appointment will be subject to the provisions of the National Health Service (Superannuation) Regulations, 1947, and the successful candidate will be required to pass a medical examination. Applications (no forms), in envelopes endorsed "Senior Medical Officer (Maternal and Child Welfare)," together with copies of three recent testimonials, or names of three referees, to be delivered to the Medical Officer of Health, Public Health Department, St. Peter's Chambers, Glebe Street, Stoke-on-Trent, not later than March 16, 1957.—Harry Taylor, Town Clerk. (9812)

LONDON COUNTY COUNCIL

VISITING MEDICAL OFFICER
Applications are invited from medical practitioners practising under National Health Service for appointment as visiting medical officer to a residential nursery at 30, Abercorn Place, N.W.8, which accommodates 15 short-stay children between 9 months and 5 years of age. Remuneration £70 a year, plus fees receivable from Executive Council in respect of children and staff who may be taken on N.H.S. list. Particulars and application form from the Medical Officer of Health (PH/D.1/257), County Hall, Westminster Bridge, S.E.1, and returnable by March 11. (4006)

LONDON COUNTY COUNCIL

VISITING MEDICAL OFFICER
Applications are invited from medical practitioners practising under National Health Service for appointment as visiting medical officer to a residential establishment at 94, Oakley Street, Chelsea, S.W.3, which accommodates 12 young children, mostly short-stay cases. Remuneration £70 a year, plus fees receivable from Executive Council in respect of children and staff who may be taken on N.H.S. list. Particulars and application form from the Medical Officer of Health (PH/D.1/324), County Hall, Westminster Bridge, S.E.1, and returnable by March 11. (4072)

WORCESTERSHIRE COUNTY COUNCIL

ASSISTANT COUNTY MEDICAL OFFICER
Applications invited from registered medical practitioners (men or women) for this appointment. The duties will chiefly concern School Health and Child Welfare Services. D.C.H. or D.P.H. an advantage. Salary, travelling and subsistence allowances on national scale. Additional £200 per annum paid for occasional duties during the absence of the Medical Officer of Health for Halesowen and Stourbridge Boroughs and Medical Superintendent of the Hayley Green Isolation Hospital. Application forms from County Medical Officer, County Buildings, Worcester. (S.18) (9957)

GOVERNMENTAL

TREASURY MEDICAL SERVICE

Applications are invited from medical practitioners, practising in the districts detailed below, for appointment, in a part-time and mainly advisory capacity, as
LOCAL TREASURY MEDICAL OFFICER
for each of the places or groups of places shown. The town shown in brackets after the place-names indicates the Head Post Office Area in which the place, or group of places, is situated. Successful applicants will be required to examine and report on the condition of certain Government Officers, teachers, candidates for appointment, etc., who may be referred to them from time to time; and to attend when summoned to an emergency case of accident or sudden illness occurring in a Government office in the neighbourhood. Fees for this work, and mileage allowance where necessary, will be paid on a scale agreed with the British Medical Association. Intending applicants should write, within 14 days, to Treasury Medical Adviser, Treasury Chambers, Whitehall, S.W.1, for a form on which application may be made. Applicants should be not more than 60 years of age. The places for which applications are invited are as follows:

England and Wales

Erdington (Birmingham, 23).
Corfe Castle (Bournemouth).
Croydon, East (Croydon).
Kenninghall (Norwich).
Nottingham, N.W. (Nottingham).
Willington Quay and Percy Main (Newcastle on Tyne).

Northern Ireland

Downpatrick (Downpatrick).

SERVICES

THE MEDICAL SERVICE OF THE ROYAL NAVY

VACANCIES FOR MEDICAL OFFICERS

Candidates are invited for Short Service Commissions of three years, on termination of which a gratuity of £600 (tax free) is payable. Ample opportunity is granted for transfer to Permanent Commissions on completion of one year's total service. Officers so transferred are paid instead a grant of £1,500 (taxable). All entrants are required to be British subjects, whose parents are British subjects, medically qualified, physically fit, and to pass an interview. Full particulars from: The Admiralty Medical Department, Queen Anne's Mansions, St. James's Park, London, S.W.1.

REPUBLIC OF IRELAND

OUR LADY'S HOSPITAL FOR SICK CHILDREN
Crumlin, Dublin

Applications are invited for the following posts:

DERMATOLOGIST (part-time)
PSYCHIATRIST (part-time)

Basis of remuneration to be such as may from time to time be sanctioned by the Minister for Health. Application forms may be obtained from the undersigned. Latest date for receipt of applications, March 23, 1957.—Kyran P. Tanham, Secretary/Manager. (9958)

Republic of Ireland—contd.

GALWAY COUNTY COUNCIL

VACANCIES ON RESIDENT MEDICAL STAFF
Galway Regional Hospital

Application forms and full particulars of the following whole-time, temporary posts may be obtained from the Secretary, Galway County Council, County Buildings, Galway, to whom completed forms should be returned so as to reach him on or before March 12, 1957:

ONE MEDICAL REGISTRAR
(to Professor of Medicine)

Salary at the rate of £800 per annum plus temporary bonus of £62 10s. per annum.

ONE SENIOR HOUSE PHYSICIAN

Salary at the rate of £600 per annum plus temporary bonus of £49 10s. per annum.

ONE HOUSE PHYSICIAN (General)

Salary at the rate of £450 per annum plus temporary bonus of £39 15s. per annum.

A deduction at the rate of £159 per annum will be made for emoluments provided in kind.—L. O'Luanaigh, Secretary. (9895)

OVERSEA (Vacant)

APPLICATIONS ARE INVITED FROM QUALIFIED OPHTHALMOLOGISTS for position in 20-member group practice in prosperous southern Alberta town. New hospital and fully equipped modern ophthalmic department available. Full partnership for suitable applicant after about two years. Initial salary from $8,400.00 (£3,000) yearly according to experience. Further details on request. Applications are invited, stating full personal and professional details, together with names of two references, to Box 3894, B.M.J.

ASSISTANTSHIP POSITION OFFERED WITH highly qualified general practitioner, Toowoomba, Queensland. Salary £2,500 per annum, plus car expenses. Applicant must hold degree of either F.R.C.S. or M.R.C.P., ultimate objective third share in specialist clinic partnership to be established. Toowoomba offers ideal climate, high schools, and hospital facilities; every assistance rendered for accommodation and transport. Apply, with details of experience, references, and personal photograph, David W. Reid, Medical Agent, Wickham Terrace, Brisbane, Queensland.

DEATH VACANCY FOR SALE. GENERAL Practice, one surviving partner, pleasant and safe country district Kenya Colony.—Box 338, B.M.J.

AUSTRALIA (N.S.W.). OPHTHALMIC ASSISTANTSHIP OFFERED. £3,000 per annum. View early partnership. Particulars, including age, whether British born, number in family, previous appointments, and practical experience in surgery.—Box 241, B.M.J.

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Oversea (Vacant)—contd.

HER MAJESTY'S OVERSEAS CIVIL SERVICE

Applications invited from doctors with qualifications registrable in the United Kingdom for the following posts in Trinidad. D.P.H. or equivalent qualification required, and in addition—for (a) three years' public health experience following diploma; for (b) three years' post-registration experience, of which two in V.D. work.

(a) Public Health Department:
MEDICAL OFFICER GRADE "A"

for duties usually required of Medical Officers of Health, including public health administration, environmental sanitation, maternity and child welfare services, school health, communicable disease control, housing, etc., and the implementation of Ordinance and Laws relating to public health. Salary scale £1,500 to £1,600 a year, plus £200 in lieu of consulting practice.

(b) Venereal Disease Division:
MEDICAL OFFICER GRADE "B"

to undertake and supervise diagnostic and treatment measures in various Venereal Disease and Yaws treatment centres; to supervise work of Junior Medical Officers, teach control and treatment measures to junior medical and nursing staff and co-operate with Public Health Officers in effecting such control. Salary scale £1,400 to £1,500 a year.

Appointment can be on permanent basis with pension (non-contributory); or on agreement or from National Health Service with retention of superannuation rights (up to six years) and gratuity (taxable) of 20% of aggregate salary on completion of engagement. Only permanent officers are members of Her Majesty's Overseas Civil Service. Government quarters, if available, at low rental, or allowance in lieu. Free passages for officer, wife and children under 18 years, not exceeding five persons in all, and up to three persons on leave. Educational facilities available. Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD 117/38/020). (4046)

MOTHERS' AND BABIES' HEALTH ASSOCIATION OF SOUTH AUSTRALIA

MEDICAL DIRECTOR

Applications are invited from fully qualified medical practitioners, male or female, for the position of Medical Director of the Mothers' and Babies' Health Association of South Australia. The Association is a charitable organization which is responsible for the greater part of the Infant Welfare Services of the State. It is administered by a Central Executive Committee, with active support and financial assistance from the South Australian Government. The post is full-time. Salary £A.2,550 per annum. The Director will be responsible to the Central Committee. Duties include supervision and administration of country and city infant welfare centres, baby health trains and mothercraft training school in Adelaide. Paediatric experience is necessary. The Director will be encouraged to investigate clinical or public health problems affecting the welfare of mothers and infants. Closing date May 18, 1957. Further details can be obtained from the Secretary, 200, North Terrace, Adelaide.- (9700)

PROGRESSIVE STATE MENTAL HOSPITAL IN VIRGINIA, 4,600 beds, expanding staff, invites applications for **Physicians** at all levels; psychiatric experience desirable but not necessary. Salary from $8,040 (approximately £2,750). All modern methods of treatments. Opportunities for research. Good retirement plan. Apply to Juul C. Nielsen, M.D., Supt., sending full résumé in first letter, to Box 271, Petersburg, Virginia, U.S.A. (9628)

UNIVERSITY COLLEGE HOSPITAL OF THE WEST INDIES

Applications are invited for two posts of

REGISTRAR OR SENIOR REGISTRAR IN MEDICINE

at this teaching hospital, which is in special relationship with the University of London. The successful candidates will be required to commence duties in May and October, 1957. One of the appointments is for eighteen months and the other for one year, and the salaries will be within the scales £900 by £100 to £1,100; £1,200 by £100 to £1,500 per annum, depending on previous experience and qualifications. If available, an unfurnished flat will be provided at a rental of 5% of salary, otherwise a living-out allowance of up to £200 per annum for a married person, £150 for a single person, will be granted. Return passages from and to the country of recruitment are provided for the appointee but not for wife and family. Further information may be obtained from the Hospital Manager and Secretary, University College Hospital of the West Indies, Mona P.O., Jamaica, B.W.I., to whom applications, stating age, nationality, qualifications and experience, together with the names and addresses of three referees, should be sent not later than March 22, 1957. (9960)

SOUTHWEST REGIONAL HOSPITAL COUNCIL

PATHOLOGIST

Applications are invited for a newly created post with headquarters in Swift Current, Saskatchewan. The successful applicant will be required to supervise laboratory services in a group of small hospitals in the south-west of Saskatchewan. Starting salary $11,000 to $13,000 per year according to experience. Travelling and subsistence expenses paid while on duty away from headquarters. Please reply, by air mail, to the Regional Hospital Co-ordinator, Southwest Regional Hospital Council, Swift Current, Saskatchewan, Canada. (9627)

UNIVERSITY OF SASKATCHEWAN
Department of Anaesthesia—University Hospital

CLINICAL AND RESEARCH FELLOW
(non-resident)

Applications are invited from qualified medical practitioners for the above post. Duties will include administration of anaesthetics and assisting the staff with teaching of students and house staff, as well as with research projects. The Department is fully approved by all examining specialty bodies in Canada, the U.K. and the United States. Completion of training is a prerequisite and preference will be given to holders of the F.F.A.R.C.S. or equivalent qualifications such as American Boards. Appointment is to start on July 1, 1957, and will be tenable for one year. Remuneration Can. $5,000 per annum. Applications, including recent photograph, curriculum vitae, and three references, should be addressed to Gordon M. Wyant, F.F.A.R.C.S., Professor of Anaesthesia, University of Saskatchewan, Saskatoon, Canada. (9961)

UNIVERSITY COLLEGE HOSPITAL
Ibadan, Nigeria
Department of Surgery

1 SENIOR REGISTRAR (1 of 2 at present)
1 REGISTRAR (1 of 5)
1 SENIOR REGISTRAR OR REGISTRAR (E.N.T.)

The Board of Management invite application from medical practitioners with the requisite post-graduate experience and qualifications for the above posts in the almost completed teaching hospital. The salaries offered for the posts are: Senior Registrar, £1,428 per annum, rising by three annual increments to £1,596 per annum, plus an inducement addition payable to an expatriate doctor of £300 per annum. Registrar, £1,164 per annum for the first year, rising to £1,212 per annum for the second year, plus an inducement addition payable to an expatriate doctor of £270 per annum. Successful candidates will be asked to assume duty about May 1, 1957. The Senior Registrar must hold the F.R.C.S. and have had sufficient experience to enable him to deputize for consultant. There is plenty of scope for operative experience. Senior Registrars will probably be asked to supervise the Casualty Department for six months of this time. This would be in conjunction with the traumatic in-patient work, which is very heavy. The Registrar will work in a team consisting of a Consultant, with or without Senior Registrar, and appropriate House Officers. There is ample scope for experience in General and Traumatic Surgery. The Registrar will also help with the supervising of Casualty in rotation. It is possible to arrange with the Anatomy and Physiology Department of University College for work for the Primary Fellowship. The Senior Registrar or Registrar (E.N.T.) should hold an F.R.C.S. and be sufficiently experienced to take charge in the absence, on leave, of the Senior Lecturer. The appointment will be initially for one tour of 12 months and will be renewable, by mutual agreement, for a further tour of 12 months. On satisfactory completion of the agreement a gratuity of £37 10s. will be paid for each completed term of three months' service. An outfit allowance of £60 is payable on first appointment. Partly furnished quarters are provided at a rental of 8 1/3% of salary, excluding inducement allowance, and the officer appointed will be eligible for seven days' leave on full pay for each completed month of service in Nigeria. Free first-class passages are provided for expatriate doctors and their wives on first appointment and on completion of their agreement. Free first-class passages to Nigeria will, in certain circumstances, be provided for non-expatriate doctors. Free first-class passages will be provided on vacation leave. Successful candidates will be eligible for children's allowance in accordance with current regulations. Arrangements can be made to enable doctors to continue their National Health Service Superannuation Scheme contributions, and details of the revised salary and gratuity payable in such cases will accompany application forms. Applications should be submitted not later than March 16, 1957, on the appropriate forms, which will be forwarded, together with additional information, on receipt of an addressed foolscap envelope by the Adviser on Staff Recruitment, London Office, University College Hospital, Ibadan, 57, Catherine Place, Palace Street, London, S.W.1. (4067)

UNIVERSITY COLLEGE HOSPITAL
Ibadan, Nigeria
Department of Medicine

SENIOR REGISTRAR
2 REGISTRARS (or Senior House Officers)

The Board of Management invite applications from registered medical practitioners for the above appointments in the new teaching hospital of 500 beds, which will open for the reception of patients within the next two months. The building is on the most modern lines. The Department of Medicine contains 120 beds; there is also a well-equipped out-patients' clinic. There is great variety in the clinical conditions encountered and much room for original work, the departmental facilities for which are excellent. Candidates insufficiently experienced for Registrar may be offered an engagement in the grading of Senior House Officer. The salaries offered for the posts are: Senior Registrar, first year £1,428 per annum, second year £1,482 per annum, third year £1,542 per annum, fourth year £1,596 per annum. Registrar, first year £1,164 per annum, second year £1,212 per annum. Senior House Officer £1,116 per annum. In addition, an inducement allowance is payable to an expatriate doctor of £270 per annum on salary less than £1,285 per annum, or £300 where the salary exceeds £1,285 per annum. The appointment will be initially for one tour of 12 months and will be renewable by mutual agreement for a further tour of 12 months. On satisfactory completion of the agreement a gratuity of £37 10s. will be paid for each completed term of three months' service. An outfit allowance of £60 is payable on first appointment. Partly furnished quarters are provided at a rental of 8 1/3% of salary, excluding inducement allowance, and an expatriate officer appointed will be eligible for seven days' leave on full pay for each completed month of service in Nigeria. Free first-class passages are provided for expatriate doctors and their wives on first appointment and on completion of their agreement. Free first-class passages to Nigeria will, in certain circumstances, be provided for non-expatriate doctors. Leave privileges for Nigerian Registrars follow closely those granted to expatriate doctors, while leave for Senior House Officers is on a lower scale. Arrangements can be made to enable doctors to continue their National Health Service Superannuation Scheme contributions, and details of the revised salary and gratuity payable in such cases will accompany application forms. Applications should be submitted not later than March 16, 1957, on the appropriate forms, which will be forwarded, together with additional information, on receipt of foolscap envelope by the Adviser on Staff Recruitment, London Office, University College Hospital, Ibadan, 57, Catherine Place, Palace Street, London, S.W.1. (4068)

(U.S.A.) MENTAL HOSPITAL PHYSICIANS

These positions involve the performance and supervision of medical care and administrative services for patients in a 2,800-bed mental hospital in the Shenandoah Valley of Virginia. Merit increases, vacation, and sick leave with pay, retirement benefits.

STAFF PHYSICIAN

Two years of psychiatric experience, at least one of which must have been in a mental hospital; licence to practise medicine in State or eligibility therefor. Starting salary $8,784 per year.

JUNIOR PHYSICIAN

Graduate from a recognized medical college supplemented by one year of rotating internship in an approved hospital; licence to practise medicine in State or eligibility therefor. Starting salary $8,400 per year.

Apply for the above positions to Superintendent, Western State Hospital, Staunton, Virginia, U.S.A. (8902)

WELLINGTON HOSPITAL BOARD

ASSISTANT RADIOLOGIST
Wellington Hospital

Applications are invited from registered medical practitioners for the full-time position of Assistant Radiologist at the Wellington Hospital. Applicants should qualify as Senior or Junior Specialists as defined in the New Zealand Hospital Employment Regulations, 1952. The position is subject to grading. The minimum salary in accordance with the Regulations for Senior Specialist is £2,000 per annum, New Zealand currency, and for Junior Specialist £1,600 per annum New Zealand currency. Duties are to commence as soon as possible after the closing date of applications. Intending applicants should apply to the High Commissioner for New Zealand, 415, Strand, London, W.C.2, for a schedule of information regarding this position. Applications close with the Secretary, Private Bag, Wellington Hospital, Wellington, New Zealand, at 9 a.m. on Tuesday, April 23, 1957.—J. B. I. Cook, Secretary. (9928)

Oversea (Vacant)—contd.

UGANDA

MEDICAL OFFICERS with qualifications registrable in the United Kingdom required for general duties and to assist with training subordinate African medical staff. Appointment on permanent basis with pension (non-contributory) or on short-term contract with gratuity. Salary from £1,284 to £2,115 a year, starting point determined by qualifications and experience. Pension earned at rate of 1/600th of final pensionable emoluments for each completed month of service. Gratuity (taxable) for contract service is 13⅓% of total salary drawn, not including allowances. Candidates in National Health Service may leave but retain superannuation rights up to six years and receive gratuity (taxable) of 20% of their salary after engagements. Permanent Medical Officers are eligible to be considered at any time for promotion to super-scale posts in Uganda and other territories in medical administration or, if they possess appropriate qualifications and suitable experience, in specialist posts. Quarters, if available, provided at low rental, furniture supplied at rental of £12 to £24 a year. Free passages provided in both directions; for officers serving tour of 30-36 months, four air passages for Officer, wife and dependent children or sea passages up to cost of three adult fares; for officers serving short tours of 12-18 months, passages for Officer, wife, and all dependent children. Educational subsidies are payable to officers, which vary from £90 a year for half the school fees, whichever is less), for primary education for first child, to £158 a year for three-fifths of school fees, whichever is less) for secondary education for third and subsequent children. Education facilities are available in East Africa, though many parents send their children to United Kingdom for secondary education. Income tax at local rates. Local leave permissible and generous home leave granted after each tour. Application forms from Director of Recruitment, Colonial Office, London, S.W.1 (quoting BCD.117/9/02). (4048)

OVERSEA (Wanted)

DUTCH PHYSICIAN (50), GENERAL PRACTITIONER with 20 years of tropical experience, is looking for position in tropics (hill region) or subtropics.—Box 339, B.M.J.

UNIVERSITY AND RESEARCH APPOINTMENTS, etc.

THE BERKELEY FELLOWSHIP
(Founded in memory of the late Sir G. H. A. Comyns Berkeley and his wife, Ethel Rose Berkeley)

The Berkeley Fellowship was founded under the will of the late Sir G. H. A. Comyns Berkeley to provide an opportunity for research in medicine, or for visits to medical institutions or hospitals to a person elected jointly by the Master and Fellows of Gonville and Caius College, Cambridge, and the Council of the Middlesex Hospital Medical School. Under the terms of the bequest, medical centres in any part of the world may be visited, with the exception of Oxford or Cambridge.

Applications from graduates in medicine of the Middlesex Hospital Medical School are invited for the Fellowship. The period of tenure of the Fellowship and the emoluments will depend upon the circumstances of each case. A Fellowship will not normally be awarded for a period shorter than three months or longer than one year, but applications for renewal will be considered. The emolument may be paid as stipend or as grant to cover travel and other expenses necessarily incurred by the Fellow in the performance of his programme of work, or partly as stipend and partly as grant. The total emolument allowed will not normally exceed $1,500 during one year's tenure.

Applications should reach the Dean of the Middlesex Hospital Medical School by April 30, 1957, and should include the following information:

(a) Name, address, and age.
(b) Qualifications and experience.
(c) Present appointment.
(d) Programme of work proposed, with estimate of necessary expenses.
(e) Other sources of financial assistance, including any stipend from present appointment, if continued during the tenure of the Fellowship.

THE UNIVERSITY OF LEEDS—UNITED LEEDS HOSPITALS

Applications are invited for appointment as **SENIOR REGISTRAR AND TUTOR IN DERMATOLOGY** at a salary on the scale £1,100 by £100 to £1,400 a year. Applications (three copies), stating date of birth, qualifications, details of present and previous appointments (with dates), and experience of teaching, together with the names of three referees, should reach the Registrar, The University, Leeds, 2 (from whom further particulars may be obtained), not later than March 25, 1957. (4013)

BRADFORD EDUCATION COMMITTEE
Technical College, Bradford

Applications are invited for the appointment of **SENIOR LECTURER IN PHYSIOLOGY AND PHARMACOLOGY**

The Senior Lecturer will be expected to undertake work at degree level in the Department of Pharmacy and to be interested in research. The salary scale, which is in accordance with the Burnham Technical Award, will be from £1,350 to £1,550 per annum for men. Further particulars of the appointment and forms of application may be obtained from the Director of Education, Town Hall, Bradford. Completed forms should be returned to the Principal of the College as soon as possible.—A. Spalding, Director of Education. (4023)

NORTHERN IRELAND HOSPITALS AUTHORITY

APPOINTMENT OF TUTOR/REGISTRAR

Applications are invited for a whole-time post as Tutor/Registrar in General Medicine at hospitals managed by the Belfast Hospital Management Committee. The appointment will be made jointly by the Authority and the Queen's University, Belfast, and will involve teaching and other university duties as Tutor in the Department of Medicine. Applications should be made on a form which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, 44-46, Queen Street, Belfast, and which must be returned so as to be received not later than March 9, 1957. (4069)

NORTHERN IRELAND HOSPITALS AUTHORITY

APPOINTMENT OF TUTOR/SENIOR HOUSE OFFICER

Applications are invited for a whole-time post as Tutor/Senior House Officer in General Medicine at hospitals managed by the Belfast Hospital Management Committee. The appointment will be made jointly by the Authority and the Queen's University, Belfast, and will involve teaching and other university duties as Tutor in the Department of Medicine. Applications should be made on a form which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, 44-46, Queen Street, Belfast, and which must be returned so as to be received not later than March 9, 1957. (4070)

ST. MARY'S HOSPITAL MEDICAL SCHOOL

LEVERHULME RESEARCH FELLOWSHIP

Applications from graduates in Medicine or Science are invited for a Leverhulme Research Fellowship of a value of £800/£900 per annum. The Fellowship will be for a period of one year, renewable for a second year, and may be held in any pre-medical, pre-clinical or clinical department of the Medical School. Applications (in duplicate), stating age, qualifications, experience, and a brief outline of the research work proposed, together with the names of two referees, should reach the Secretary, St. Mary's Hospital Medical School, Paddington, W.2, not later than March 22, 1957. (9937)

THE UNIVERSITY OF LEEDS
Department of Chemical Pathology

Applications are invited from honours graduates in chemistry or biochemistry and from medically qualified persons for appointment as

DEMONSTRATOR *or* LECTURER in Chemical Pathology

Salary for a Demonstrator will be on the scale £700 by £100 to £900 if medically qualified, or within the range £550 to £650 if not medically qualified; for a Lecturer the salary will be on the scale £1,100 by £100 to £1,700 if medically qualified, or £650 by £50 to £1,350 if not medically qualified. Applications (three copies), stating date of birth, qualifications and experience, together with the names of three referees, should reach the Registrar, the University, Leeds, 2 (from whom further particulars may be obtained), not later than March 25, 1957. (9970)

THE UNIVERSITY OF SHEFFIELD

Applications are invited from medically qualified persons for the following posts:

(a) LECTURER IN ANATOMY
(b) DEMONSTRATOR IN ANATOMY
(one or two)

to begin duties October 1, 1957. Salary scales: Lecturer, £1,000 by £100 to £1,700. Demonstrator, £700 by £100 to £900, with F.S.S.U. provision and family allowance. Initial salary on either scale according to qualifications and experience. The laboratories are well equipped for histological, histochemical and experimental research. Further particulars should be obtained from the Registrar, to whom applications (four copies) should be sent by April 13, 1957. (9616)

ROYAL COLLEGE OF SURGEONS OF ENGLAND

ELECTION OF PROFESSORS AND LECTURERS

The Council invites applications for election to the office of Hunterian Professor, Arris and Gale Lecturer, Arnott Demonstrator and Erasmus Wilson Demonstrator for the ensuing year. The twelve Hunterian Lectures, illustrated by Hunterian specimens, are delivered by Fellows or Members of the College. The three Arris and Gale Lectures are on subjects relating to Human Anatomy and Physiology, the six Arnott Demonstrations on the contents of the Museum, and the six Erasmus Wilson Demonstrations on the Pathological contents of the Museum. Applications, in writing, must be made to the Secretary on or before Saturday, April 27. Candidates for the Hunterian Professorships, Arris and Gale Lectureships are requested to submit with their applications twenty-five copies of a synopsis of approximately 500 words describing the subject matter of their proposed lecture. Each copy of the synopsis to have the name of applicant in the top right-hand corner. Applicants are required to state their present appointments and the extent to which the work submitted is original. Work carried out under a superior must be shown to have the latter's approval before being submitted. In the case of Hunterian Lecturers, the Council is prepared to consider applications for either a series of lectures or a single lecture.—Kennedy Cassels, Secretary, Lincoln's Inn Fields, London, W.C.2. (9901)

THE UNIVERSITY OF LIVERPOOL

Applications are invited for the post of **LECTURER in the Department of Biochemistry** at an initial salary within the range £1,000 to £1,200 per annum for a medically qualified candidate, and within the range £650 to £1,050 per annum for a non-medically qualified candidate, according to qualifications and experience. Applications, stating age, academic qualifications and experience, together with the names of three referees, should be received not later than March 23, 1957, by the undersigned, from whom further particulars of the conditions of appointment may be obtained.—Stanley Dumbell, Registrar. (9973)

UNIVERSITY OF BRISTOL

Applications are invited for the temporary post of

ASSISTANT LECTURER (GRADE III) or DEMONSTRATOR IN PHYSIOLOGY

Initial salary £550 to £700 per annum, according to qualifications and experience, together with superannuation and children's allowances. A medical qualification is desirable. Applications, with the names of three referees, should be forwarded so as to reach the undersigned, from whom further particulars may be obtained, not later than March 25, 1957.—H. C. Butterfield, Registrar and Secretary. (9962)

UNIVERSITY OF DURHAM
The Medical School, King's College, Newcastle upon Tyne

Applications are invited for the post of **TEMPORARY DEMONSTRATOR in the Department of Pathology**

The appointment will be for one year in the first instance but renewable for a further period up to a maximum of three years. The successful applicant will be required to assist in post-mortem examinations and in the general work of the Department of Pathology, which is housed in the Teaching Hospital of the Royal Victoria Infirmary, Newcastle upon Tyne. Salary within the range of £700/£800 per annum. Applications, giving full name, age, qualifications and experience, together with the names of two referees, should be addressed to the Assistant Registrar, the Medical School, King's College, as soon as possible.—G. R. Hanson, Registrar of King's College. (4071)

SCHOLARSHIPS

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

SCHOLARSHIPS FOR THE 1957-58 DIPLOMA IN PUBLIC HEALTH COURSE

Applications are invited from registered medical practitioners for (a) the A. H. BYGOTT SCHOLARSHIP, value £200; (b) two ELLISTON MEMORIAL SCHOLARSHIPS, each value £150, and (c) the SIR ARTHUR NEWSHOLME MEMORIAL SCHOLARSHIP, value approximately £200. No tuition fees are charged to successful candidates. Applicants may apply for more than one scholarship. These scholarships are tenable for one session at the London School of Hygiene and Tropical Medicine for the course for the University of London's Academic Postgraduate Diploma in Public Health, commencing October 1, 1957. Applications must be received by May 15, 1957, by the Dean, London School of Hygiene and Tropical Medicine, Keppel Street (Gower Street), London, W.C.1, from whom application forms may be obtained. (4014)

Scholarships—contd.

NUFFIELD ORTHOPAEDIC CENTRE
Headington, Oxford

The Trustees invite application from suitably qualified persons for the following scholarships:

THE LORD NUFFIELD SCHOLARSHIP IN ORTHOPAEDIC SURGERY

Value £800 per annum tax free, plus £160 per annum living-out allowance and the possibility of a terminal grant for the study of Orthopaedics elsewhere.

GIRDLESTONE MEMORIAL SCHOLARSHIP

Value £330 per annum tax free, plus a living-out allowance of £160.

Applications, giving full personal details, together with the names of two referees, should be received not later than March 31, 1957, by the undersigned, from whom full particulars can be obtained.—John Mullins, Secretary to the Trustees. (9969)

NOTICES

PREGNANCY DIAGNOSIS BY THE XENOPUS METHOD. 24-hour service. Send specimen of urine and fee. Haematology, Biochemistry, Flame Photometry.—Welbeck Biological Laboratories, 26, Park Crescent, Portland Place, W.1. MUS 5386-7.

EDUCATIONAL AND LECTURES

SURGICAL TUTORIALS, LONDON, BY M.S., F.R.C.S.—Box 131, B.M.J.

CHILDREN'S DISEASES (D.C.H.), MARCH 4 to 16. Daily 5.30 p.m. Lectures and clinical cases. Princess Louise Kensington Hospital. Apply Fellowship of Postgraduate Medicine, 60, Portland Place, London, W.1. Langham 4266. (9983)

FACULTY OF ANAESTHETISTS, ROYAL COLLEGE OF SURGEONS OF ENGLAND

A course of twenty-four lectures in Anaesthetics will be given at the College from April 1 to 12, 1957. The Entrance Fee is Twenty-Four Guineas. For further information write to W. F. Davis, Esq., Secretary, Faculty of Anaesthetists, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2. (4015)

MEDICAL CORRESPONDENCE COLLEGE, 19, Welbeck Street, London, W.1, provides COACHING for all Medical Examinations. D.A., F.F.A., D.P.M., D.O., D.L.O., D.C.H., D.M.R.D., D.P.H., M.R.C.P., F.R.C.S., M.D. thesis and all qualifying exams. by a staff of highly qualified Tutors, Honoursmen, and Gold Medalists. Complete Guide to Medical Examinations sent free on application. Applicants should state in which qualification they are interested.

GENERAL SURGERY AND ORTHOPAEDICS (F.R.C.S.). Saturday mornings, March 9 to May 4. Clinical cases. Fulham Hospital. Apply Fellowship of Postgraduate Medicine, 60, Portland Place, London, W.1. Langham 4266. (9985)

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS. Examination successes 1940-1955: M.R.C.P.Lond., 234; F.R.C.S.Eng., Primary, 185; F.R.C.S.Eng., Final, 262; M. and D.Obst. R.C.O.G., 312; D.A., 262; D.C.H., 183; University and Conjoint Finals, 751. Up-to-date courses for the M.D.Lond., M.R.C.P.Edin., F.R.C.S.Edin., D.P.H., F.F.A., D.P.M. Assistance with M.D. Thesis. Prospectus, list of tutors, etc., on application to G. E. Oates, M.D., M.R.C.P.(Lond.), University Examination Postal Institution, 17, Red Lion Square, London, W.C.1. 'Phone: HOLborn 6313.

UNIVERSITY OF GLASGOW and ROYAL FACULTY OF PHYSICIANS AND SURGEONS
Postgraduate Medical Education Committee

COURSE ON UROLOGY

A Course of Instruction in Urology will be held in the Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, and in the teaching hospitals of Glasgow from April 1 to April 5, 1957: Monday, April 1, 1957: 2 p.m., Inauguration. 2.15 p.m., Clinico-pathological Conference on Urological Diseases. Chair: W. B. Davis. Tuesday, April 2, 1957: At Victoria Infirmary, Langside, Glasgow, S.2. 9.30 a.m., Operating Session and Clinical Demonstration: T. L. Chapman and Staff. 12.30 p.m., Lunch at Victoria Infirmary. 2 p.m., Short Papers: J. E. Craik, Renal Function Tests. J. W. Sutherland, Studies in Calculus Disease. Wednesday, April 3, 1957: At Royal Infirmary, Castle Street, Glasgow, C.4. 9.30 a.m., Operating Session and Clinical Demonstration: A. Jacobs and Staff. 12.30 p.m., Lunch at Glasgow Royal Infirmary. At Faculty Hall, 242, St. Vincent Street, Glasgow, C.2: 2 p.m., "Bladder Tumours." Dr. Cuthbert Dukes, London. 3 p.m., Discussion: Openers, A. Jacobs, T. Symington, T. L. Chapman, W. S. Mack. Thursday, April 4, 1957: At Western Infirmary, Dumbarton Road, Glasgow, W.1. 9.30 a.m., Operating Session and Clinical Demonstration: W. S. Mack and Staff. 12.30 p.m., Lunch at Western Infirmary. 2 p.m., Short Papers: W. L. Milne, Polycystic Disease; L. S. Scott, Renal Tumours in Childhood. Friday, April 5, 1957: At Royal Infirmary, Castle Street, Glasgow, C.4: 9.30 a.m., Symposium on Genito-Urinary Tuberculosis: W. M. Borthwick, W. G. Wimsett, A. Jacobs. 11.15 a.m., Short Papers: W. B. Stirling, Renal Angiography; A. Marshall, Urinary Infection in the Catheterized Patient. 12.30 p.m., Lunch at Glasgow Royal Infirmary. At Faculty Hall, 242, St. Vincent Street, Glasgow, C.2: 2.30 p.m., Symposium on Dilatation of the Upper Urinary Tract: W. S. Mack, Dilatation of the renal pelvis and ureter; A. Jacobs, The correction of obstruction at the pelvi-ureteral junction; T. L. Chapman, The aberrent artery in relation to hydronephrosis; R. A. Tennent, Dilatation of the upper urinary tract in pregnancy. There is no fee for the Course. Further particulars may be obtained from the Registrar, Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, C.2. (4077)

ROYAL COLLEGE OF SURGEONS OF ENGLAND
FACULTY OF DENTAL SURGERY

EXAMINERSHIPS

The Board invite applications for the following Examinerships for submission to the Council of the College:

	Number to be elected
FOR THE LICENCE IN DENTAL SURGERY	
First Examination, Part I	
(Anatomy)	2
(Physiology)	2
First Examination, Part II	
(Special Anatomy and Physiology)	4
Second Examination	
(Dental Prosthetics and Properties of Dental Materials)	5
*Final Examination	
(Dental Section)	4
FOR THE FELLOWSHIP IN DENTAL SURGERY	
Primary Examination	
(Anatomy)	2
(Physiology)	2
(Pathology)	2
*(Dental Section)	2
Final Examination	
*(Dental Section)	4
FOR THE DIPLOMA IN ORTHODONTICS	
*Dental Surgery	6
Anatomy	1
Physiology	1

* Candidates must be registered under the Dentists Act 1878–1923

Application forms may be obtained from the Secretary of the Faculty, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2, and must be returned to him by Saturday, March 23, 1957.

W. F. DAVIS,
Secretary,
Faculty of Dental Surgery.

March, 1957.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Council invite applications for the following Annual Examinerships:

FOR THE FELLOWSHIP	No. to be elected	No. who seek Re-election
*Anatomy:		
Surgeons	4	4
Anatomists	4	4
*Pathology	4	4
*Applied Physiology	4	4
*Associate Examiner in Ophthalmology	1	1
FOR THE LICENCE IN DENTAL SURGERY		
Board of Examiners in Dental Surgery (Surgical Section)	6	5
Examiners must be Fellows of the College, and will be required to examine in General Surgery (including Surgical Pathology), Medicine, General Pathology and Bacteriology.		
FOR THE FELLOWSHIP IN DENTAL SURGERY		
Board of Examiners for the Fellowship in Dental Surgery	2	2
Examiners must be Fellows of the College, and will be required to examine in General Surgery.		
FOR THE FELLOWSHIP OF FACULTY OF ANAESTHETISTS		
The Examiner must be a Surgeon and will be required to conduct (with a Physician) Part II (Medicine and Surgery) of the Final Examination	1	0
UNDER THE EXAMINING BOARD IN ENGLAND		
Elementary Biology	2	2
*Anatomy	3	2
*Physiology	2	1
†Midwifery	4	4
Pathology (for M.R.C.S., L.R.C.P.):		
Surgeons	2	2
Pathologists	2	2
Public Health	1	0
Tropical Medicine and Hygiene:		
Pathology and Tropical Hygiene	1	1
Tropical Medicine and Surgery	1	0
Ophthalmology	7	6
Psychological Medicine:		
Part I (Neurologist)	2	2
Laryngology and Otology:		
Part I	2	2
Part II	1	0
Medical Radio-Diagnosis:		
Part I	1	1
Part II	1	1
Medical Radiotherapy:		
Part I	1	1
Part II	1	1
Anaesthetics:		
Surgeon	1	0
Anaesthetist	1	1
Child Health	3	2
Physical Medicine:		
Part I	2	2
Part II	2	2
Industrial Health	1	1
Pathology (for Diploma in Pathology)	2	1

*Candidates must hold a medical qualification registrable in this country.

†Candidates must be Fellows or Members of the College.

Forms of application can be obtained from the Secretary, and these must be completed and returned by Saturday, March 23, 1957.

KENNEDY CASSELS,
Secretary.

Lincoln's Inn Fields, W.C.2.
March 2, 1957.

SOCIETY OF APOTHECARIES OF LONDON.—Surgery: March 11, April 8, May 13. Medicine and Pathology: March 18, April 15, May 20. Midwifery: March 19, April 16, May 21. Master of Midwifery: May and November. Diploma in Industrial Health: July and December. For regulations, apply Registrar, Apothecaries Hall, Black Friar's Lane, London, E.C.4.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

John Rupert Squire, Esq., M.D., F.R.C.P., will deliver the Oliver-Sharpey Lectures on Tuesday and Thursday, March 12 and 14, 1957, at 5 p.m. at the College, Pall Mall East, S.W.1. Subject: **"The Functions of the Plasma Proteins."** Any member of the medical profession admitted on presentation of card.—By order of the President, Harold Boldero, Registrar. (9986)

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SURGICAL REVISION (F.R.C.S.), MONDAY, Thursday and Friday mornings, March 18 to April 12. Royal Marsden Hospital. Clinical teaching and tutorials. Apply Fellowship of Postgraduate Medicine, 60, Portland Place, London, W.1. Langham 4266. (9984)

SITUATIONS VACANT

Staffordshire General Infirmary, Stafford

Applications invited for post of

Biochemist (non-medical)

Senior grade. In charge of biochemical laboratory under Group Pathologist. Whitley Council salary scale and conditions of service. Applications, stating age, qualifications and experience, and names of two referees, to Group Secretary, Stafford H.M.C., 13, Foregate Street, Stafford. (9537)

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CRUISE ON A MILLIONAIRE'S YACHT in Springtime. Twenty vacancies only. Days ashore Nice-Elba-Rome-Naples (Capri-Ischia). Sicily (Taormina-Syracuse), Malta-Sardinia-Corsica. Departures March 23, April 6, April 20. 15 days from only 59 gns. London-London.

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THE HERMITAGE, TWYFORD, BERKSHIRE

A country house Nursing Home for treatment of Neurosis and Addiction. Brochure from Resident Physician. Tel.: 53.

The Charges for CLASSIFIED ADVERTISEMENTS are shown on the Inside Back Cover February 23 issue

CHEADLE ROYAL, CHEADLE, CHESHIRE

Registered Mental Hospital

President:
The Right Hon. The Earl of Derby, M.C.
Medical Superintendent:
W. V. Wadsworth, B.Sc., M.B., M.R.C.P., D.P.M.

This hospital receives all types of patients who are suffering from psychological and senile illnesses. It has recently been extensively redecorated and central heating has been installed throughout, making it one of the most luxuriously appointed hospitals in the country. Private rooms, with special nurses, can be provided.

All patients receive very careful and thorough clinical and pathological investigation, the most modern psychiatric treatment is available, including deep insulin therapy. Psychotherapeutic treatment is employed in suitable cases.

OCCUPATIONAL THERAPY is a special feature of the hospital and there are excellent facilities for indoor and outdoor recreation—tennis, cricket, croquet, badminton, billiards, cinema, television, etc.

GERIATRIC UNITS for mild cases of senility are provided where patients can pursue as normal a life as possible.

The hospital is situated in 300 acres of pleasant Cheshire parkland, and yet is only 9 miles from Manchester.

GLAN-Y-DON is the hospital's convalescent home overlooking the sea at Colwyn Bay. It is extremely comfortable and well appointed and has its own farm and market garden.

For terms and further particulars, apply to the Medical Superintendent. Telephone: GATLEY 2231.

NORTHUMBERLAND HOUSE

Psychiatric Nursing Home, 235-7, Ballards Lane, N.3. Tel.: FINchley 5283. Resident Med. Director, Dr. R. M. Riggall, Mem. Brit. Psycho-Analytical Society. Deep insulin coma unit, psychotherapy, etc. Fees from 12 gns.

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For the treatment of Medical Emergencies and the Neuroses.

Apply Matron: Miss Teresa Clark, S.R.N., Tel. TATe Gallery 3041/2.

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'Phone: Bedford 3417

For Mental Cases (including the aged). Fees from nine guineas per week. For forms of admission, etc., apply to the Resident Physician, Cedric W. Bower. Interviews in London by appointment.

WOODSIDE NURSING HOME

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WYKE HOUSE, ISLEWORTH, MIDDLESEX

A private Hospital for individual treatment of all forms of Nervous and Mental Illness including Alcoholism. Voluntary and certified patients of both sexes are admitted and particular attention is given to the needs of the aged. Apply Resident Medical Superintendent. Tel.: EALing 7000.

MEDICAL PRACTICES ADVISORY BUREAU

APPOINTMENTS INFORMATION SERVICE

Doctors seeking information about openings in the various fields of medical practice or introductions as locums, assistants or partners, are invited to address enquiries to the Medical Director, Medical Practices Advisory Bureau, at

B.M.A. House, Tavistock Square, London, W.C.1. Telephone number: EUSton 5601/2.

33, Cross Street, Manchester. Telephone number: Deansgate 3691.

7, Drumsheugh Gardens, Edinburgh, 3. Telephone number: Central 7184.

234, St. Vincent Street, Glasgow, C.2. Telephone number: Central 5630.

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Scholarships—contd.

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Headington, Oxford

The Trustees invite application from suitably qualified persons for the following scholarships:

THE LORD NUFFIELD SCHOLARSHIP IN ORTHOPAEDIC SURGERY

Value £800 per annum tax free, plus £160 per annum living-out allowance and the possibility of a terminal grant for the study of Orthopaedics elsewhere.

GIRDLESTONE MEMORIAL SCHOLARSHIP

Value £330 per annum tax free, plus a living-out allowance of £160.

Applications, giving full personal details, together with the names of two referees, should be received not later than March 31, 1957, by the undersigned, from whom full particulars can be obtained.—John Mullins, Secretary to the Trustees. (9999)

NOTICES

PREGNANCY DIAGNOSIS BY THE XENOPUS METHOD. 24-hour service. Send specimen of urine and fee. Haematology, Biochemistry, Flame Photometry.—Welbeck Biological Laboratories, 26, Park Crescent, Portland Place, W.1. MUS 5386-7.

EDUCATIONAL AND LECTURES

SURGICAL TUTORIALS, LONDON, BY M.S., F.R.C.S.—Box 131, B.M.J.

CHILDREN'S DISEASES (D.C.H.), MARCH 4 to 16. Daily 5.30 p.m. Lectures and clinical cases. Princess Louise Kensington Hospital. Apply Fellowship of Postgraduate Medicine, 60, Portland Place, London, W.1. Langham 4266. (9983)

FACULTY OF ANAESTHETISTS, ROYAL COLLEGE OF SURGEONS OF ENGLAND

A course of twenty-four lectures in Anaesthetics will be given at the College from April 1 to 12, 1957. The Entrance Fee is Twenty-Four Guineas. For further information write to W. F. Davis, Esq., Secretary, Faculty of Anaesthetists, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2. (4015)

MEDICAL CORRESPONDENCE COLLEGE, 19, Welbeck Street, London, W.1, provides COACHING for all Medical Examinations. D.A., F.F.A., D.P.M., D.O., D.L.O., D.C.H., D.M.R.D., D.P.H., M.R.C.P., F.R.C.S., M.D. thesis and all qualifying exams. by a staff of highly qualified Tutors, Honoursmen, and Gold Medalists. Complete Guide to Medical Examinations sent free on application. Applicants should state in which qualification they are interested.

GENERAL SURGERY AND ORTHOPAEDICS (F.R.C.S.). Saturday mornings, March 9 to May 4. Clinical cases. Fulham Hospital. Apply Fellowship of Postgraduate Medicine, 60, Portland Place, London, W.1. Langham 4266. (9985)

POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS. Examination successes 1940-1955: M.R.C.P.Lond., 234; F.R.C.S.Eng., Primary, 185; F.R.C.S.Eng., Final, 262; M. and D.Obst. R.C.O.G., 312; D.A., 262; D.C.H., 183; University and Conjoint Finals, 751. Up-to-date courses for the M.D.Lond., M.R.C.P.Edin., F.R.C.S.Edin., D.P.H., F.F.A., D.P.M. Assistance with M.D. Thesis. Prospectus, list of tutors, etc., on application to G. E. Oates, M.D., M.R.C.P.(Lond.), University Examination Postal Institution, 17, Red Lion Square, London, W.C.1. 'Phone: HOLborn 6313.

UNIVERSITY OF GLASGOW and ROYAL FACULTY OF PHYSICIANS AND SURGEONS
Postgraduate Medical Education Committee

COURSE ON UROLOGY

A Course of Instruction in Urology will be held in the Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, and in the teaching hospitals of Glasgow from April 1 to April 5, 1957: Monday, April 1, 1957: 2 p.m., Inauguration. 2.15 p.m., Clinico-pathological Conference on Urological Diseases. Chair: W. B. Davis. Tuesday, April 2, 1957: At Victoria Infirmary, Langside, Glasgow, S.2. 9.30 a.m., Operating Session and Clinical Demonstration: T. L. Chapman and Staff. 12.30 p.m., Lunch at Victoria Infirmary. 2 p.m., Short Papers: J. E. Craik, Renal Function Tests. J. W. Sutherland, Studies in Calculus Disease. Wednesday, April 3, 1957: At Royal Infirmary, Castle Street, Glasgow, C.4. 9.30 a.m., Operating Session and Clinical Demonstration: A. Jacobs and Staff. 12.30 p.m., Lunch at Glasgow Royal Infirmary. At Faculty Hall, 242, St. Vincent Street, Glasgow, C.2: 2 p.m., "Bladder Tumours." Dr. Cuthbert Dukes, London. 3 p.m., Discussion: Openers, A. Jacobs, T. Symington, T. L. Chapman, W. S. Mack. Thursday, April 4, 1957: At Western Infirmary, Dumbarton Road, Glasgow, W.1. 9.30 a.m., Operating Session and Clinical Demonstration: W. S. Mack and Staff. 12.30 p.m., Lunch at Western Infirmary. 2 p.m., Short Papers: W. L. Milne, Polycystic Disease: L. S. Scott, Renal Tumours in Childhood. Friday, April 5, 1957: At Royal Infirmary, Castle Street, Glasgow, C.4: 9.30 a.m., Symposium on Genito-Urinary Tuberculosis: W. M. Borthwick, W. G. Wimsett, A. Jacobs. 11.15 a.m., Short Papers: W. B. Stirling, Renal Angiography: A. Marshall, Urinary Infection in the Catheterized Patient. 12.30 p.m., Lunch at Glasgow Royal Infirmary. At Faculty Hall, 242, St. Vincent Street, Glasgow, C.2: 2.30 p.m., Symposium on Dilatation of the Upper Urinary Tract: W. S. Mack, Dilatation of the renal pelvis and ureter; A. Jacobs, The correction of obstruction at the pelvi-ureteral junction; T. L. Chapman, The aberrent artery in relation to hydronephrosis: R. A. Tennent, Dilatation of the upper urinary tract in pregnancy. There is no fee for the Course. Further particulars may be obtained from the Registrar, Royal Faculty of Physicians and Surgeons, 242, St. Vincent Street, Glasgow, C.2. (4077)

ROYAL COLLEGE OF SURGEONS OF ENGLAND
FACULTY OF DENTAL SURGERY

EXAMINERSHIPS

The Board invite applications for the following Examinerships for submission to the Council of the College:

	Number to be elected
FOR THE LICENCE IN DENTAL SURGERY	
FIRST EXAMINATION, PART I	
(Anatomy)	2
(Physiology)	2
FIRST EXAMINATION, PART II	
(Special Anatomy and Physiology)	4
SECOND EXAMINATION	
(Dental Prosthetics and Properties of Dental Materials)	5
*FINAL EXAMINATION	
(Dental Section)	4
FOR THE FELLOWSHIP IN DENTAL SURGERY	
PRIMARY EXAMINATION	
(Anatomy)	2
(Physiology)	2
(Pathology)	2
*(Dental Section)	2
FINAL EXAMINATION	
*(Dental Section)	4
FOR THE DIPLOMA IN ORTHODONTICS	
*Dental Surgery	6
Anatomy	1
Physiology	1

* Candidates must be registered under the Dentists Act 1878–1923

Application forms may be obtained from the Secretary of the Faculty, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C.2, and must be returned to him by Saturday, March 23, 1957.

W. F. DAVIS,
Secretary,
Faculty of Dental Surgery.

March, 1957.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Council invite applications for the following Annual Examinerships:

FOR THE FELLOWSHIP	No. to be elected	No. who seek Re-election
*Anatomy:		
Surgeons	4	4
Anatomists	4	4
*Pathology	4	4
*Applied Physiology	4	4
*Associate Examiner in Ophthalmology	1	1
FOR THE LICENCE IN DENTAL SURGERY		
Board of Examiners in Dental Surgery (Surgical Section)	6	5
Examiners must be Fellows of the College, and will be required to examine in General Surgery (including Surgical Pathology); Medicine, General Pathology and Bacteriology.		
FOR THE FELLOWSHIP IN DENTAL SURGERY		
Board of Examiners for the Fellowship in Dental Surgery	2	2
Examiners must be Fellows of the College, and will be required to examine in General Surgery.		
FOR THE FELLOWSHIP OF FACULTY OF ANAESTHETISTS		
The Examiner must be a Surgeon and will be required to conduct (with a Physician) Part II (Medicine and Surgery) of the Final Examination	1	0
UNDER THE EXAMINING BOARD IN ENGLAND		
Elementary Biology	2	2
*Anatomy	3	2
*Physiology	2	1
†Midwifery	4	4
Pathology (for M.R.C.S., L.R.C.P.):		
Surgeons	2	2
Pathologists	2	2
Public Health	1	0
Tropical Medicine and Hygiene:		
Pathology and Tropical Hygiene	1	1
Tropical Medicine and Surgery	1	0
Ophthalmology	7	6
Psychological Medicine:		
Part I (Neurologist)	2	2
Laryngology and Otology:		
Part I	2	2
Part II	1	0
Medical Radio-Diagnosis:		
Part I	1	1
Part II	1	1
Medical Radiotherapy:		
Part I	1	1
Part II	1	1
Anaesthetics:		
Surgeon	1	0
Anaesthetist	1	1
Child Health	3	2
Physical Medicine:		
Part I	2	2
Part II	2	2
Industrial Health	1	1
Pathology (for Diploma in Pathology)	2	1

*Candidates must hold a medical qualification registrable in this country.

†Candidates must be Fellows or Members of the College.

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Secretary.

Lincoln's Inn Fields, W.C.2.
March 2, 1957.

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John Rupert Squire, Esq., M.D., F.R.C.P., will deliver the Oliver-Sharpey Lectures on Tuesday and Thursday, March 12 and 14, 1957, at 5 p.m. at the College, Pall Mall East, S.W.1. Subject: **"The Functions of the Plasma Proteins."** Any member of the medical profession admitted on presentation of card.—By order of the President. Harold Boldero, Registrar. (9986)

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Applications invited for post of
Biochemist (non-medical)
Senior grade. In charge of biochemical laboratory under Group Pathologist, Whitley Council salary scale and conditions of service. Applications, stating age, qualifications and experience, and names of two referees, to Group Secretary, Stafford H.M.C., 13, Foregate Street, Stafford. (9537)

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(Convalescence, Holidays, etc.)

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HOVE. LARGE SELF-CONTAINED UNFURNished ground floor flat available in most select position. Four years of present lease unexpired. Good quality permanent fixtures and fittings to be purchased.—Box 325, B.M.J.

CONSULTING ROOMS, ETC.

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Excellent Suite of Consulting Rooms, close to Grosvenor Square. Ground and Lower Ground Floor Accommodation. Magnificently fitted.—Details from: Collins and Collins and Rawlence and Squarey, 3, Chesterfield Gardens, Curzon Street, W.1. GRO. 3641.

For Consulting Rooms and Houses in Harley Street, etc., apply C. E. Bedford & Co., Ltd., 10, Wigmore Street, W.1. Langham 3927.

Harley Street Consulting Room, furnished, £150 year, one day week. £50 each additional day.—Box 354, B.M.J.

Harley Street (second floor, no lift), 2 Consulting Rooms, bright, spacious, plus additional room (so far bathroom) available for one or two consultants. Usual offices. Especially recommended to Psychiatrists, Ophthalmologists, Ear, Nose and Throat Surgeons.—Box 340, B.M.J.

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CRUISE ON A MILLIONAIRE'S YACHT in Springtime. Twenty vacancies only. Days ashore. Nice-Elba-Rome-Naples (Capri-Ischia), Sicily (Taormina-Syracuse), Malta-Sardinia-Corsica. Departures March 23, April 6, April 20. 15 days from only 59 gns. London-London.

SPAIN.—By air or rail to Perpignan, thence by car to the good hotels on the Costa Brava from 14 days, 29 gns.; also Balearic Islands, Majorca-Ibiza, by our Air/Coach/Steamer unique arrangements.

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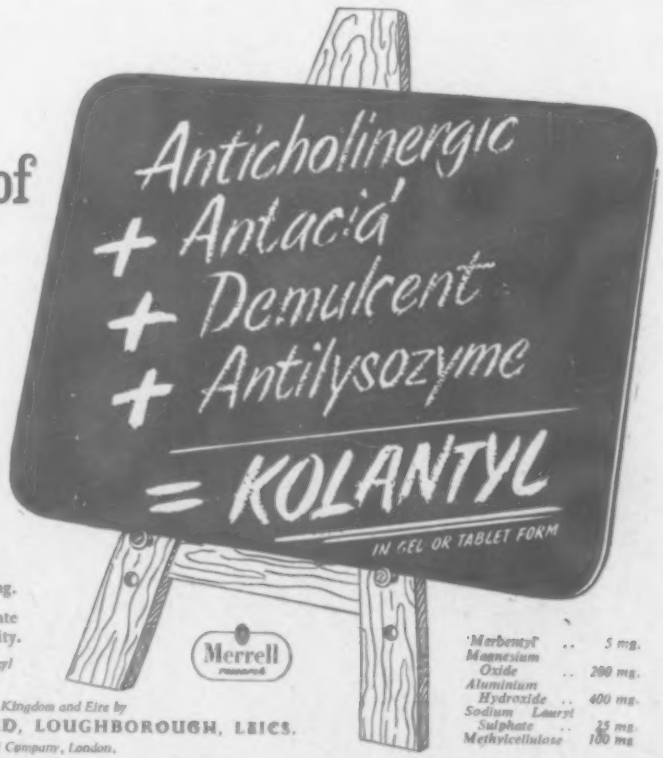

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